ENERGY AND WATER DEVELOPMENT APPROPRIATIONS FOR FISCAL YEAR 2010

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, DC.

NONDEPARTMENTAL WITNESSES

[CLERK'S NOTE.—At the direction of the subcommittee chairman, the following statements received by the subcommittee are made part of the hearing record on the Fiscal Year 2010 Energy and Water Development Appropriations Act.]

DEPARTMENT OF DEFENSE—CIVIL

DEPARTMENT OF THE ARMY

CORPS OF ENGINEERS—CIVIL

PREPARED STATEMENT OF THE RED RIVER VALLEY ASSOCIATION

Mr. Chairman and members of the subcommittee, I am Wayne Dowd, President, and pleased to represent the Red River Valley Association, 629 Spring St., Shreveport, Louisiana. Our organization was founded in 1925 with the express purpose of uniting the citizens of Arkansas, Louisiana, Oklahoma and Texas to develop the land and water resources of the Red River Basin.

The Resolutions contained herein were adopted by the Association during its 84th Annual Meeting in Shreveport, Louisiana, on February 19, 2009, and represent the combined concerns of the citizens of the Red River Basin area as they pertain to the goals of the Association. A summary of the civil works projects and requested funding is included in this testimony.

The President's fiscal year 2010 budget included $5.1 billion for the civil works programs. It is $350 million more than proposed in fiscal year 2009 and $300 million less than what Congress enacted in the fiscal year 2009 Omnibus bill, $5.4 billion. The problem is also how the administration distributes funds. A few projects received the full "Corps Capability" to the detriment of many projects that receive no funding. Even though this is one of the largest administrative budgets, the $5.1 billion level does not come close to the real needs of our Nation. A more realistic funding level to meet the existing needs of the civil works program is $8 billion for fiscal year 2010. The traditional civil works programs remain at the low, unacceptable level as in past years. These projects are the backbone to our Nation's infrastructure for waterways, flood prevention, water supply and ecosystem restoration. We remind you that civil works projects are a true "jobs program" in that up to 85 percent of project funding is contracted to the private sector; 100 percent of the construction, as well as much of the architect and engineering work. Not only do these projects provide jobs, but provide economic development opportunities for our communities to grow and prosper, creating permanent jobs.

We want to point out that we appreciate the funding Congress enacted in the fiscal year 2009 Omnibus Bill; however, it is $200 million less than appropriated in fiscal year 2008. We encourage Congress to increase the "water" share of the total Energy and Water bill closer to 20 percent to reach the $8 billion capability.

Another proposal allocates O&M funding by watershed regions and eliminates funding by individual project. We do not accept this concept since you will loose ownership and identity of each project; therefore, lose grass root support. If this was

done, due to reprogramming constraints, then reprogramming should be addressed. Major reprogramming issues are with CG projects, not with O&M projects. Fund O&M by project, not watershed basins.

We have great concerns over the issue of "earmarks". Civil Works projects are not earmarks! Civil Works projects go through a process; reconnaissance study, feasibility study, benefit to cost ratio test, EIS, peer review, review by agencies, public review and comment, final Chief of Engineer approval, authorization by all of Congress in a WRDA bill and signed by the President. WRDA 2007 added an independent review of major projects. No other Federal program goes through such a rigorous approval process. Each justified project "stands alone", are proven to be of national interest and should be funded by project. For most projects there is local sponsor cost sharing during the feasibility study, construction and for O&M. Those who have contributed, in most cases—millions of dollars—to the process, must have the ability to have a say for their projects to get funded. That voice is through their Congressional delegation. We believe that earmarks are not in the national interest, but it does not pertain to the civil works program. For civil works it is an issue of priority of projects to be funded and who will determine that, OMB or Congress! We hope Congress keeps their responsibility to set civil works priorities and to determine how its citizen's tax dollars are spent.

The President's budget proposes eliminating the current fuel tax to fund the Inland Waterways Trust Fund (IWTF) and replace it with a barge lock-use fee. This change creates an unfair tax to industries on waterways with locks versus waterways without locks. The needs of the IWTF should be analyzed and determine what increase to the existing fuel tax would maintain the necessary income flow to keep projects funded from the Inland Water Trust Fund. The lockage fee proposal is unfair to tributary waterways with locks and we request it not be implemented.

I would now like to comment on some of our specific requests for the future economic well being of the citizens residing in the four State Red River Basin regions. It is noted that at the time for testimony submission the details of the President's fiscal year 2010 budget have yet to be released.

Navigation.—The J. Bennett Johnston Waterway is living up to the expectations of the benefits projected. We are extremely proud of our public ports, municipalities and State agencies that have created this success. This upward "trend" in usage will continue as new industries commence operations. A major power company, CLECO, is investing $1 billion in its Rodemacher Plant near Boyce, Louisiana, on the lower Red River and has started moving over 3 million tons of "petroleum coke" and limestone, by barge, in the 4th quarter 2008. These projects are a reality and there are many more industries considering using our Waterway.

You are reminded that the Waterway is not complete, 6 percent remains to be constructed, $121 million. We appreciate Congress' appropriation level in fiscal year 2009 of $7,656,000. There is a capability for $21 million of work, but we realistically request $12 million to keep the project moving toward completion, "J. Bennett Johnston Waterway (CG)".

Now that the J. Bennett Johnston Waterway is reliable year round we must address efficiency. Presently a 9-foot draft is authorized for the J. Bennett Johnston Waterway. All waterways below Cairo, Illinois are authorized at 12-foot, to include the Mississippi River, Atchafalaya River, Arkansas River and Gulf Intracoastal Waterway. A 12-foot channel would allow an additional one-third capacity, per barge, which will greatly increase the efficiency of our Waterway and further reduce transportation rates. This one action would have the greatest, positive impact to reduce rates and increase competition, bringing more industries to use waterborne transportation. We request a 1-year reconnaissance study be funded to evaluate this proposal, at a cost of $100,000. Fact: Approximately 95 percent is already at 12-foot year round.

The feasibility study to continue navigation from Shreveport-Bossier City, Louisiana, into the State of Arkansas will be completed in CY 2010. This region of SW Arkansas and NE Texas continues to suffer major unemployment and this navigation project, although not the total solution, will help revitalize the economy. Due to the time lapsed in the study the "freight rates" calculated a number of years ago they must be re-evaluated this year. We request funding of $100,000 to conduct the re-evaluation of freight rates, "Navigation into SW Arkansas".

Flood Prevention.—What will happen when we ignore our levee systems? We know the Red River levees in Arkansas do not meet Federal standards, which is why we have the authorized project, "Red River Below Denison Dam, TX, AR & LA". Now is the time to bring these levees up to standards, before a major flood event, which will occur.

We continue to consider flood control a major objective and request you continue funding the levee rehabilitation projects ongoing in Arkansas. Five of 11 levee sections have been completed and brought to Federal standards.

The levees in Louisiana have been incorporated into the Federal system; however, they do not meet current safety standards. These levees do not have a gravel surface roadway, threatening their integrity during times of flooding. It is essential for personnel to traverse the levees during a flood to inspect them for problems. Without the gravel surface the vehicles will cause rutting, which can create conditions for the levees to fail. A gravel surface will insure inspection personnel can check the levees during the saturated conditions of a flood.

Appropriations of $15 million will construct one more levee section in Lafayette County, AR and continue the rock surfacing of levees in Louisiana, "Red River Below Denison Dam, AR & LA".

Bank Stabilization.—One of the most important, continuing programs, on the Red River is bank stabilization in Arkansas and North Louisiana. We must stop the loss of valuable farmland that erodes down the river and interferes with the navigation channel. In addition to the loss of farmland is the threat to public utilities such as roads, electric power lines and bridges; as well as increased dredging cost in the navigable waterway in Louisiana. These bank stabilization projects are compatible with subsequent navigation into Arkansas and we urge that they be continued in those locations designated by the Corps of Engineers to be the areas of highest priority. We appreciated the Congressional funding in past fiscal years and request you fund this project at a level of $11 million in fiscal year 2010, "Red River Emergency Bank Protection".

Water Quality.—The Assistant Secretary of the Army (Civil Works), in October 1998, agreed to support a re-evaluation of the Wichita River Basin tributary of the project. The re-evaluation report was completed and the Director of Civil Works signed the Environmental Record of Decision. The plan was found to be economically justified. Then the ASA (CW) directed that construction would not proceed until a local sponsor was found to assume 100 percent of the O&M for the project. The 2007 WRDA bill included language that clarified that all aspects of this project will be at full Federal expense, to include O&M.

Over the past years there has been a renewed interest by the Lugart-Altus Irrigation District to evaluate construction of Area VI, of the Chloride Control Project, in Oklahoma. They have obtained the support of many State and Federal legislators, as well as a letter from the Oklahoma Governor in support of a re-evaluation report.

Total request for the "Chloride Control Project": $9,000,000 for the Texas and Oklahoma areas.

Water Supply.—Lake Kemp, just west of Wichita Falls, TX, is a major water supply for the needs of this region. Due to siltation the available storage of water has been impacted. A reallocation study is needed to determine water distribution needs and raising the conservation pool. Total O&M of $664,000 is requested for fiscal year 2010 ($214,000 is required for the base annual O&M, $300,000 for the study and $150,000 for service bridge and gate repair).

A water re-allocation study has been completed for Lake Texoma. It will provide for an additional 600,000 acre-feet for municipal use. The release of the study has been delayed at the Corps HQ for over a year. Congress needs to request that this re-allocation study be approved and released.

Studies.—We have a number of General Investigation (GI) studies that have been funded and have local sponsors prepared to cost share feasibility studies. Some of those important studies include: Bossier Parish Flood Control Study, LA—$350,000; Cross Lake Water Supply Study, LA—$100,000; SE Oklahoma Water Resource Study, OK—$500,000; SW Arkansas Study, AR—$100,000; Washita River Basin, OK—$500,000 and Wichita River Basin, TX—$100,000. These studies are important to have projects ready for future construction.

Operation & Maintenance.—Full O&M capability levels are not only important for our Waterway project but for all our Corps projects and flood control lakes. The backlog of critical maintenance only becomes worse and more expensive with time. The "2007 Summer Flood of Record" was devastating to the recreation industry at Lake Texoma, on the main stem Red River, as well as a number of other Oklahoma lakes. We urge you to appropriate funding to address this serious issue, either through an emergency supplemental or the appropriation bill. We request that the Corps O&M projects be funded at the expressed, full Corps capability.

American Recovery and Reinvestment Act of 2009.—The original administrative submission did not include civil works funding. We want to thank Congress for including $4.6 billion in the "stimulus" package for civil works projects, especially in the O&M account. These additional funds will be important to address our long list of backlog needs.

Thank you for the opportunity to present this testimony and project details of the Red River Valley Association on behalf of the industries, organizations, municipalities and citizens we represent throughout the four State Red River Valley region. The Civil Works program directly relates to national security by investing in economic infrastructure. If waterways are closed companies will not relocate to other parts of the country—they will move over seas. If we do not invest now there will be a negative impact on our ability to compete in the world market threatening our national security.

RED RIVER VALLEY ASSOCIATION FISCAL YEAR 2010 APPROPRIATIONS—CIVIL WORKS [1]

[Dollars in thousands]

	Fiscal Year 2009 Approp Omnibus	RRVA Fiscal Year 2010 Request	President Fiscal Year 2010 Budget	Local Sponsor Requirements
Studies (GI):				
Navigation into SW Arkansas: Feasibility	.....	$100	.....	(ARRC)
Red River Waterway, LA–12' Channel, Recon.	.....	100	.....	(RRWC)
Bossier Parish, LA	$191	350	.....	(Bossier Levee)
Cross Lake, LA Water Supply Supplement	229	100	.....	(Shreveport)
SE Oklahoma Water Resource Study: Feasibility.	311	500	.....	(OWRB)
SW Arkansas Ecosystem Restoration: Recon Study.	143	184	.....	(?)
Cypress Valley Watershed, TX	.....	100	.....	(?)
Sulphur River Basin, TX	.....	1,000	.....	(Sulphur Auth)
Washita River Basin, OK	191	500	.....	(L)
Wichita River Basin above Lake Kemp, TX: Recon.	.....	100	.....	(L)
Red River Above Denison Dam, TX & OK: Recon.	.....	100	.....	(L)
Red River Waterway, Index, AR to Denison Dam.	.....	44	.....	(?)
Mountain Fork River Watershed, OK & AR, Recon.	.....	.....	.....	(?)
Walnut Bayou, Little River, AR	.....	100	.....	(ANRC)
Red River Waterway, Index to Denison, Bendway Weir.	.....	.....	.....	(?)
Construction General (CG):				
Red River Waterway: J.B. Johnston Waterway, LA.	7,656	21,000	.....	(RRWC)
Chloride Control Project, TX & OK	2,201	9,000	.....	N/A
Red River Below Denison Dam; AR & LA	2,105	11,000	.....	(Levee Districts)
Bowie County Levee, TX	.....	.....	.....	(Levee Districts)
Red River Emergency Bank Protection	2,817	15,000	.....	(Levee Districts)
Big Cypress Valley Watershed, TX: section 1135.	.....	1,450	.....	(Jefferson)
Palo Duro Creek, Canyon, TX: section 205	.....	100	.....	(Canyon, TX)
Millwood, Grassy Lake, AR: section 1135	(2)	350	.....	(?)
Little River County/Ogden Levee, AR, PED	.....	300	.....	(ASWC)
McKinney Bayou, AR, PED	.....	.....	.....	
Miller County Levee, AR, section 1135	.....	.....	.....	(Miller Levee)
Operation and Maintenance (O&M):				
J. Bennett Johnston Waterway, LA	9,797	16,230	.....	
Lake Kemp, TX—Total Need	198	664	.....	
Basic Annual O&M	.....	214	.....	
Reallocation Study	.....	300	.....	
Service Bridge & Gate Repair	.....	150	.....	
Lake Texoma, TX & OK—Total Need	6,164	9,393	.....	
Basic Annual O&M	.....	6,393	.....	
Suppl. EIS	.....	1,000	.....	
Backlog Maintenance	.....	2,000	.....	

RED RIVER VALLEY ASSOCIATION FISCAL YEAR 2010 APPROPRIATIONS—CIVIL WORKS [1]—Continued

[Dollars in thousands]

	Fiscal Year 2009 Approp Omnibus	RRVA Fiscal Year 2010 Request	President Fiscal Year 2010 Budget	Local Sponsor Requirements
Chloride Control Project, TX & OK	1,348	5,824		

[1] Depending on final Stimulus funding RRVA fiscal year 2010 requests may change. Details of the President's fiscal year 2010 budget have NOT yet been released.
[2] YES.

NOTE: Local Sponsor Column—Sponsor indicated in ( ); (?) indicates No Sponsor identified and need one to continue (L) indicates Sponsor not required now but need one for feasibility; N/A—No Sponsor required.

PREPARED STATEMENT OF THE NATURE CONSERVANCY

Mr. Chairman and the members of the subcommittee, thank you for the opportunity to present The Nature Conservancy's recommendations for fiscal year 2010 appropriations for the U.S. Army Corps of Engineers (Corps) and Bureau of Reclamation.

The Nature Conservancy's recommendations represent a priority set of efforts that are both individually important and collectively designed to demonstrate innovations in restoration to help guide future resource allocation. Further, if done well, ecosystem restoration projects pay dividends through services such as provision of more reliable and higher quality water, natural flood attenuation, sustaining commercial fisheries, and supporting economically-important outdoor recreation. Moreover, the Nation's resiliency to climate change will be substantially dictated by the health of our ecosystems. In short, we believe the public investments we are requesting now will pay far larger dividends for decades to come.

CORPS CONSTRUCTION PRIORITIES

Continuing Authorities Program.—We thank the subcommittee for continuing its strong support of the section 1135: Project Modifications for Improvement of the Environment and section 206: Aquatic Ecosystem Restoration programs. However, demand for these programs continues to outstrip funding. The Conservancy requests that the programs be fully funded by appropriating $40 million for section 1135 and $50 million for section 206.

The Conservancy seeks funding for two section 1135 projects. The Spunky Bottoms project (IL) is a model floodplain restoration and reconnection effort on the Illinois River that needs $400,000 to complete a feasibility study in fiscal year 2010; the Conservancy is the non-Federal cost share partner. Additional dollars will be necessary for the planning, specifications, construction and monitoring phases, totaling approximately $7.5 million. The Chain Bridge Flats project (D.C.) needs $100,000 to complete a reconnaissance report to restore a globally rare habitat along the Potomac River.

The Conservancy also seeks funding for three section 206 projects: Emiquon Preserve (IL), a floodplain restoration and reconnection project that needs $600,000 to complete a feasibility study, sign a project partnership agreement, and begin design; Camp Creek (OR), a headwaters stream restoration project that needs $575,000 to sign a PCA and complete construction; and Navajo Reservation Implementation (NM), which needs $510,000 for restoration on the San Juan River. The Conservancy is the cost share partner for Emiquon and Camp Creek.

We continue to be concerned about the subcommittee's guidance for these programs. The prioritization requirements and "no new starts" rule in the fiscal year 2009 report block the implementation of important conservation priorities that enjoy strong support from their local communities. We urge the subcommittee to adopt a more flexible approach. Appropriating the requested amounts will help address the backlog in these programs, as will funds from the American Recovery and Reinvestment Act.

Estuary Restoration Program.—The Estuary Restoration Program is a national, multi-level, multi-agency strategy to restore our Nation's estuaries that benefits fish, shellfish and wildlife; improves surface and groundwater resources; provides flood control; and enhances recreational opportunities. The Conservancy supports $10 million for the Estuary Restoration Program in fiscal year 2010.

Upper Mississippi River Navigation and Ecosystem Sustainability Program.—The Navigation and Ecosystem Sustainability Program (NESP) is a dual purpose author-

ity for integrated management of the Upper Mississippi River (UMR) system's habitat and navigation facilities. All activities implemented under the existing Environmental Management Program (EMP) can be transitioned into NESP, but it is critical to fund both programs until the transition is complete. While the Corps has the capability to execute a $50 million budget for NESP in fiscal year 2010 for ecosystem restoration and navigation projects, and we support this funding level, we also recognize the current budgetary constraints and acknowledge that a more realistic NESP fiscal year 2010 new start request should be $35 million. The Conservancy also supports $33.2 million for EMP in fiscal year 2010.

Missouri River Fish and Wildlife Recovery Program (MRRP).—Under this program, the Corps has completed 30 projects in the lower Missouri basin States to assist in the recovery of three listed species, restoring more than 40,000 acres of habitat. New authority was provided in WRDA 2007 for the expenditure of funds in the upper basin States and for the Intake Dam project on the Yellowstone River in Montana. Construction of fish passage and screens at Intake Dam is a priority for the recovery of the endangered pallid sturgeon and other warm-water fish. The Conservancy supports $85 million for the MRRP in fiscal year 2010, including sufficient funding to continue progress on the design and construction of fish passage and screens at Intake Dam.

South Florida Everglades Ecosystem Restoration Program.—Corps flood control projects, coupled with agricultural and urban development, have degraded one of the most diverse and ecologically rich wetlands ecosystems in the world. WRDA 2007 authorized construction of the first projects under the Comprehensive Everglades Restoration Plan (CERP). We place priority on funding the restoration of the Kissimmee River, a project that is almost 75 percent complete and already a restoration success story. The Conservancy requests $300 million for the South Florida Ecosystem Restoration Program in fiscal year 2010.

Puget Sound and Adjacent Waters.—The Puget Sound and Adjacent Waters Program provides funding for early action projects to restore Puget Sound and its watershed. The Conservancy requests $3.5 million for Puget Sound and Adjacent Waters in fiscal year 2010. Identification of these early action projects is informed by the Puget Sound Nearshore Ecosystem Restoration project (in the Investigations account), for which the Conservancy requests $1.5 million in fiscal year 2010.

Hamilton City Flood Damage Reduction and Ecosystem Restoration.—This project will increase flood protection for Hamilton City, CA and surrounding agricultural lands and restore approximately 1,500 acres of riparian habitat. The PED phase for this project will be complete in fiscal year 2009, the non-Federal sponsor is in place and the project received construction authorization in WRDA 2007. The Conservancy supports $15 million in fiscal year 2010 to complete the first phase of construction.

Chesapeake Bay Oyster Recovery.—Eastern oyster populations in the Chesapeake Bay have been decimated from historical levels by a century of overfishing, disease and pollution. This project will help move the oyster population towards sustainable levels. The requested appropriation will create more than 60 acres of additional oyster habitat. The Conservancy supports $4 million in fiscal year 2010 for this program.

SUSTAINABLE RIVERS PROJECT

The Sustainable Rivers Project (SRP) is an initiative launched by the Corps that recognizes the urgent need to update decades-old water management practices to meet society's needs today and in the coming decades. The SRP is developing and demonstrating innovative approaches to reservoir operations that restore critical ecosystems and valuable ecosystem services, while continuing to provide for (and often improving) water supply and flood risk management. These innovative approaches also offer substantial promise for social and ecological adaptation to climate change. The SRP currently involves work in 8 river basins containing 36 Federal reservoirs, as well as training and development of next-generation decision support tools for water management. The Conservancy requests $3 million for the Corps' Institute for Water Resources to support engineering and scientific needs of current and new SRP sites.

Savannah Basin Comprehensive Water Resources Study.—The Savannah River basin is experiencing tremendous growth, and recent droughts have highlighted the need to comprehensively address water use issues in the basin. The reconnaissance phase of this study evaluated water management in the reservoirs and indicated that future needs may not be met under current management practices. The feasibility phase will consider a new set of rules that could meet future demands while

protecting more than 200 miles of river and tens of thousands of acres of wetlands. The Conservancy supports $250,000 in fiscal year 2010.

Willamette River Floodplain Restoration Study.—The Corps and the Conservancy are working together to identify ecological flow requirements downstream of Corps dams, and to incorporate those flows into dam operations. Initial efforts have focused on the Middle and Coast Forks of the Willamette, in conjunction with a study to identify floodplain habitat restoration opportunities, and implementation and monitoring of flow releases are ongoing. Flow analysis has begun in additional tributaries, with the ultimate goal of system-wide changes in dam operation and floodplain management to meet ecological goals. The Conservancy supports $150,000 in fiscal year 2010 to continue this study.

Connecticut River Watershed Study.—This project will restore 410 miles of river flow and thousands of acres of natural habitat in the Connecticut River Basin. The basin is a priority landscape for the Conservancy due to its high quality tributary systems, unique natural communities and multitude of ESA-listed species. The study identifies dam management modifications for environmental benefits while maintaining beneficial human uses. We support $450,000 in fiscal year 2010 for this study.

Bill Williams River—Alamo Dam.—Numerous Federal, State and private partners have invested significant funding in determining the flow needs of downstream ecosystems and working with the Corps to change operations at Alamo Dam to provide these flows. This request will provide additional baseline information about the River and continue long-term monitoring to guide future management actions on rivers across the southwestern U.S. The Conservancy supports an Operations and Maintenance appropriation for Alamo Dam in fiscal year 2010 that includes $250,000 for these purposes.

OTHER CORPS INVESTIGATION PRIORITIES

Thames River Basin Watershed Study.—The Thames River Basin ecosystem, including its tributaries to Long Island Sound, depends on naturally variable water flow, good water quality and suitable habitat. This study will determine what research and measures are necessary to improve the management of water control structures in the basin. We support $100,000 in fiscal year 2010 to complete the reconnaissance phase.

Middle Potomac River Watershed Comprehensive Study.—This study will develop a comprehensive, multi-jurisdictional sustainable watershed management plan for the Middle Potomac River watershed, balancing the ecological functions and services provided by the river with the human demands upon it. To support the completion of the watershed assessment, we support $844,000 in fiscal year 2010.

Yellowstone River Corridor Comprehensive Study.—Funding this ongoing study of economics, fisheries, and wetlands studies will help ensure that the longest free-flowing river in the lower 48 States maintains its natural functions while supporting irrigation and other economic uses of its waters. The Conservancy supports $750,000 for fiscal year 2010.

Lake Champlain Canal Feasibility Study.—Invasive species are the most significant threat to the native biodiversity of Lake Champlain in New York and Vermont. Several new invaders are poised to enter Lake Champlain through the Champlain Canal in coming years, and an invasive species dispersal barrier is urgently needed. The Corps is authorized to study the feasibility of such a barrier and to construct and operate it. The Conservancy supports $500,000 for the feasibility study in fiscal year 2010.

Susquehanna River Basin Low Flow Management and Environmental Restoration.—Drought conditions, combined with current and projected demands for water use, have the potential to impact natural ecosystems in the Susquehanna River basin and the upper Chesapeake Bay. This appropriation will fund a basin-wide study to investigate low flow conditions and establish ecologically based goals and standards for low flow management. The Conservancy supports $285,000 in fiscal year 2010 for this project.

Navajo Reservation Watershed Management, Restoration and Development.—The San Juan River watershed is severely impacted by water withdrawals, flow regulation at Navajo Dam and runoff from petroleum extraction and agriculture. This project will formulate a conservation strategy for the watershed within the Navajo Nation. The Conservancy supports $315,000 in fiscal year 2010 for this project.

Pecos River Environmental Management Planning.—The Pecos River below Santa Rosa Dam is severely affected by flow regulation, irrigation, water withdrawals and runoff, preventing native vegetation from regenerating and causing frequent drying. This project will help develop a comprehensive strategy that identifies key conserva-

tion targets, critical threats and practical actions to address them. The Conservancy supports $840,000 in fiscal year 2010 for this project.

CORPS EXPENSES

Mid-Atlantic River Basin Commissions.—We applaud the subcommittee for restoring Federal funding to the Delaware, Potomac, and Susquehanna River Basin Commissions in fiscal year 2009. They are essential to advancing and coordinating the water management and conservation interests of the Federal Government, the affected States, and the Conservancy. We support $2,365,000 for the Commissions in fiscal year 2010.

BUREAU OF RECLAMATION

Upper Colorado River Endangered Fish Recovery and San Juan River Basin Recovery Programs.—These programs take a balanced approach to restore four endangered fish species in the Colorado River system while allowing water use to continue in the arid West. A full appropriation will fund work on remaining major capital projects, including the completion of fish screens at the Hogback Diversion Dam and Tusher Wash Dam. The Conservancy supports $3.2 million in fiscal year 2010 for these Programs.

Platte River Recovery Implementation Program.—An agreement between the Governors of Wyoming, Nebraska and Colorado and the Secretary of the Interior sets forth a plan to restore five endangered or threatened species in the Platte River basin. The Conservancy supports $14,038,500 for this recovery effort in fiscal year 2010.

Over the course of the past 10 years, restoration funding through the Corps has frequently focused on a select set of large-scale programs. These programs have been essential to restoring and maintaining some of America's most precious and imperiled ecosystems. At the same time, the role of smaller-scale projects should not be underestimated for their cumulative benefit and power as demonstrations to guide broader-scale efforts. We encourage the subcommittee to address the needs of these critical projects while continuing to support large-scale programs.

All of the restoration projects supported in this testimony will create the same kinds of on-the-ground jobs created through the American Recovery and Reinvestment Act. The restored wetland and water resources resulting from these projects will also contribute ongoing value to local and regional economies through the important ecosystem services provided by healthy waterways and wetlands.

Thank you for the opportunity to present our comments on the Energy and Water Appropriations bill.

PREPARED STATEMENT OF THE AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE)

Mr. Chairman and members of the subcommittee, the American Society of Civil Engineers (ASCE) welcomes the opportunity to provide our views on the budget estimates for the U.S. Army Corps of Engineers (USACE or the Corps) and the U.S. Bureau of Reclamation (Bureau) for fiscal year 2010.

In its recent report on the concurrent resolution for fiscal year 2010, the House Budget Committee said that the United States faces two significant deficits: the first, a budget in deficit this year alone by $1.752 trillion, according to the Office of Management and Budget (OMB); the second, an economy running at 6.8 percent, or $1 trillion, below its potential.

These are daunting numbers, and Congress confronts a major challenge in funding the operations of the Government in light of the depressed economy and the continuing Federal deficits.

But ASCE believes the Nation faces a third deficit—one that is as important as the first two. The United States must manage a continuing infrastructure investment deficit. Federal outlays for basic public works systems have declined relative to gross domestic product (GDP) over the past several decades.

In its 2009 Report Card for America's Infrastructure, ASCE reported that the Nation needs to invest approximately $2.2 trillion over the next 5 years to maintain the Nation's total infrastructure in good condition.

Even with current and planned investments from Federal, State, and local governments in the next 5 years, the "gap" between the overall need and actual spending will total more than $1 trillion by 2014.

Within the Nation's general water resources alone, ASCE identified a 5-year funding gap of more than $20 billion.

Nowhere is the infrastructure investment deficit more acute than in our waterways. Of the 257 locks still in use on the Nation's inland waterways, 30 were built in the 19th century and another 92 are more than 60 years old. The average age of all federally owned or operated locks is nearly 60 years, well past their planned design life of 50 years. The cost to replace the present system of locks is estimated at more than $125 billion.

CONGRESS SHOULD APPROPRIATE $7 BILLION FOR THE U.S. CORPS OF ENGINEERS CIVIL WORKS PROGRAM IN FISCAL YEAR 2010

The U.S. Army Corps of Engineers has one of the Federal Government's largest environmental responsibilities. The Corps provides ecosystem restoration, constructs sustainable facilities, regulates waterways and manages natural resources, and cleans up contaminated military bases.

Forty-one States, 16 State capitals and all States east of the Mississippi River are served by commercially navigable waterways. The U.S. inland waterway system consists of 12,000 miles of navigable waterways in four systems that connect with most of the States in the United States. The entire system contains 257 locks. The waterways include the Mississippi River, the Ohio River Basin, the Gulf Intercoastal Waterway, and the Pacific Coast systems.

Three-quarters of the Nation's inland waterways (9,000 miles) are within the Mississippi River system. The next largest segment is the Ohio River system (2,800 miles). The Gulf Coast Intercoastal Waterway system is 1,109 miles, and the Columbia River system is only 596 miles long, the shortest of the four major systems.

The network includes nearly 11,000 miles of the "fuel-taxed inland waterway system." Commercial waterway operators on these designated waterways pay a fuel tax, deposited in the Inland Waterways Trust Fund, which funds half the cost of new construction and major rehabilitation of the inland waterway infrastructure.

Because of their ability to move large amounts of cargo, the inland waterways are a strategic economic and military resource. A recent analysis by the U.S. Army War College concluded that "the strategic contributions of these inland waterways are not well understood. The lack of adequate understanding impacts decisions contributing to efficient management, adequate funding, and effective integration with other modes of transportation at the national level. Recommendations demonstrate that leveraging the strategic value of U.S. inland waterways will contribute to building an effective and reliable national transportation network for the 21st century."

The current system of inland waterways lacks resilience in that waterway usage is increasing but facilities are aging and many are well past their design life of 50 years. Recovery from any event of significance would be harmed by the age and deteriorated condition of the system. Future investment must focus on life-cycle maintenance, system interdependencies, redundancy, security, and recovery from natural and man-made hazards.

In spite of inadequate budgets in recent years, the Corps continues to keep the waterways functioning. It will open new twin 1,200-foot locks on the Ohio River to replace a single, shorter lock built in 1921. The Corps is currently constructing new, larger locks in several States, including Illinois, Kentucky, Louisiana, Pennsylvania, and West Virginia.

The Corps also is embarking on major renovations of several older locks. These projects represent a $3.5 billion investment in modernizing the Nation's inland waterways. They also include significant investments in environmental restoration and management.

The Corps is bringing new technology online to make waterways navigation safer. The latest innovation is called "real-time current and velocities." This system alerts waterways users to the real-time speed of wind and currents on inland waterways. A total of six systems will be completed by the end of 2009.

In addition to the infrastructure mentioned above, the Corps has major responsibilities in other areas. It protects coastlines; develops flood-reduction and hydropower projects; oversees 4,300 recreation areas at 420 lakes in 43 States; and operates 134 multiple-purpose projects that contain storage for water supply in 26 States and Puerto Rico.

The USACE also shares responsibility among Federal, State and local agencies, and private landowners for raising awareness and understanding of the risks associated with living and working behind levees.

The fiscal year 2009 appropriation for the Corps of Engineers is $5.4 billion, but the construction backlog for the Corps tops $60 billion nationwide. Even with the addition of $4.6 billion for fiscal year 2009 through the American Recovery and Reinvestment Act, the investment deficit on our waterways remains at an estimated $20.5 billion through 2014.

The President's budget proposal for fiscal year 2010 is $5.1 billion. Despite the difficult budget climate and the dismal economic picture, we urge an appropriation of $7 billion in fiscal year 2010 to begin the long overdue process of rebuilding America's water resources infrastructure.

CONGRESS SHOULD APPROPRIATE $1.3 BILLION FOR THE U.S. BUREAU OF RECLAMATION IN FISCAL YEAR 2010

The Bureau of Reclamation's mission is to "manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public." The Bureau is the Nation's largest wholesale water supplier; it administers 348 reservoirs with a total storage capacity of 245 million acre-feet of water. It provides water to more than 31 million customers and supplies 20 percent of western farmers with water to irrigate 10 million acres of farmland.

In addition, the Bureau is the Nation's second largest producer of hydroelectric power, generating more than 40 billion kilowatt-hours of energy each year—an amount equivalent to the energy provided by 80 million barrels of crude oil. In the 100 years since Reclamation's creation, the Federal Government has invested almost $21 billion in original development costs for its infrastructure and other facilities.

The Bureau operates 348 dams and reservoirs, 58 hydropower generation facilities, more than 8,000 miles of canals, more than 24,000 miles of water distribution laterals, and more than 13,000 miles of drains. ASCE notes that most of Reclamation's major dams, reservoirs, hydroelectric plants, and irrigation systems are 50 or more years old. In December 2007, the Bureau calculated that nearly 80 of the 348 dams (approximately 23 percent) are 90 to 100 years old or older.

The Bureau has identified an estimated $3 billion in total infrastructure investment needs over the next 20 years.

We concur with former Commissioner Robert Johnson, who informed Congress in 2008 that, although the Bureau and its more than 350 operating partners have successfully operated and maintained the infrastructure to date, the aging process will inevitably lead to increased pressure on budgets and user rates to keep infrastructure service and reliability corresponding with past levels. The Bureau and its partners anticipate a steady increase in infrastructure repair needs that will continue to grow over time, the Bureau said last April.

The fiscal year 2009 appropriation was $1.1 billion, the same as fiscal year 2008, for dams, canals, water treatment and conservation, and rural water projects. The fiscal year 2010 proposal is $1.020 billion. Congress should appropriate $1.3 billion for the U.S. Bureau of Reclamation in fiscal year 2010, with the bulk of the increase set aside for infrastructure renewal under the Bureau's 5-year capital improvement plan.

PREPARED STATEMENT OF THE BOARD OF LEVEE COMMISSIONERS FOR THE YAZOO-MISSISSIPPI DELTA

U.S. ARMY CORPS OF ENGINEERS MISSISSIPPI RIVER & TRIBUTARIES PROJECT FISCAL YEAR 2010 REQUEST—$500 MILLION

As the front line flood protection provider for the approximately 300,000 Mississippians who reside within the 10 counties of our levee district, the Yazoo-Mississippi Delta Levee Board humbly requests that you allocate adequate funding to fully fund the Mississippi River and Tributaries Project (MR&T) at the Corps of Engineers' capability level for the 2010 fiscal year—$500 million.

And yes, we do know that is a lot of money. Even in this time—one which many of us believed we'd never see—of trillion dollar deficits and untold trillions in evaporated wealth, we do indeed know that $500 million is a lot of money.

We know that these are perilous times for our Nation, times in which the collective wisdom and sound judgment of you men and women will be nothing less than critical to our well being as a people. We know there are simply fiscal limits and we know that priorities must be and will be set.

But we also know that flood control is nothing less than vital to America's heartland. In many cases, such as our part of the Mississippi Delta, flood control is the primary factor allowing those who live there to live there. The heartland produces much of the food and fiber which allows us to feed and clothe not only our Nation, but much of the world. But there can be no food, there can be no fiber if the most fertile soils this side of the Nile delta were to be under water—were to be again inundated by the same water which created them.

The Mainline Mississippi River Levee System, truly one of the world's greatest engineering marvels, is literally all that stands between the human beings who live

and produce and prosper up and down, along either side of the Mississippi River—the largest, most powerful and often most fickle flowing waterway on the North American continent. Our levees are strong, true and tested, but like all the creations of man, they must be maintained; they must be vigilantly strengthened and repaired from the ravages of the power they contain every day.

We ask that the MR&T's levees be funded at levels of $69.972 million for construction, $61.2 million for channel improvements, $13.522 million for levee maintenance and $79.309 million for channel maintenance.

There are many projects, many efforts within the flood control umbrella that is the MR&T, and there are many who will speak to you on behalf of them, but for our people, for the lives and livelihoods of those we are dedicated to protect, there is only this levee board to speak. And so we now will.

For us there must remain one overriding priority—the Upper Yazoo Project. Ladies and Gentlemen, this effort designed to protect thousands from chronic flooding along the Yazoo/Coldwater river system, is perhaps the least controversial flood control project in the Nation, favored not only by our citizenry but the environmental community, as well. It is designed and it is demonstratively effective within its completed reaches. It need only be adequately funded to provide long awaited relief to those who have suffered for many years.

We ask that you provide the Corps capability funding level of $24.4 million in 2010.

We also ask that this collective Congress provide funding for the following projects affecting our district and its people at the 2010 capability levels:

CONSTRUCTION	
Backwater	$325,000
Main Stem	$25,000
MS Delta Headwaters	$25 million
Big Sunflower River	$2.18 million
Reformulation Study	$3 million
MAINTENANCE	
Revetments and Dikes	$58.2 million
Sardis Lake	$14.483 million
Arkabutla Lake	$13.793 million
Enid Lake	$12.69 million
Grenada Lake	$13.231 million
Greenwood	$1.85 million
Yazoo City	$550,000
Yazoo Main Stem	$3.154 million
Yazoo Tributaries	$953,000
Big Sunflower	$4.311 million
Yazoo Backwater	$905,000

Thank you for your careful consideration of our requests and we trust that once again, as has been so critical for our people on so many occasions over the years, the old adage will once again be validated: "The President proposes, but the Congress disposes."

Prepared Statement of the California State Coastal Conservancy

SUMMARY

On behalf of the California State Coastal Conservancy, I want to thank the subcommittee for this opportunity to present our priorities for fiscal year 2010 and, at the same time, express our appreciation for your support of the Conservancy's projects in past years. The Conservancy respectfully requests needed funding for the following critical U.S. Army Corps of Engineers projects during fiscal year 2010. All of these requests reflect Corps of Engineers capability for the individual projects: $18 million for the Matilija Dam Ecosystem Project (Construction General); $7,750,000 for Napa River Salt Marsh Project (Construction General); $18,500,000 for the Hamilton Bel-Marin Keys Wetland Restoration Project (Construction General) and $2,800,000 for the South San Francisco Bay Shoreline Study (General Investigations).

CONSERVANCY BACKGROUND

The California Coastal Conservancy, established in 1976, is a State agency that uses entrepreneurial techniques to purchase, protect, restore and enhance coastal resources while providing public access to the shore. We work in partnership with local governments, other public agencies, nonprofit organizations, and private landowners to accomplish these goals.

To date, the Conservancy has undertaken more than 950 projects along the 1,100 mile California coastline and around San Francisco Bay, resulting in completed projects in every coastal county and all 9 San Francisco Bay Area counties. Through these projects, the Conservancy: protects and improves coastal wetlands, streams, and watersheds; works with local communities to revitalize urban waterfronts; assists local communities in solving complex land-use problems; and protects agricultural lands and supports coastal agriculture, to list a few of its main activities.

Since our establishment in 1976, the Coastal Conservancy has: helped build more than 300 access ways and trails opening more than 80 miles of coastal and bay lands for public use; assisted in the completion of over 100 urban waterfront projects; and joined in partnership endeavors with more than 100 local land trusts and other nonprofit groups, making local community involvement an integral part of the Coastal Conservancy's work.

MATILIJA DAM ECOSYSTEM RESTORATION PROJECT—CORPS OF ENGINEERS, LOS ANGELES DISTRICT

In fiscal year 2010 we are seeking $18,500,000 in Construction funding for the Army Corps of Engineers Construction General account to finalize design and begin the removal of the Matilija Dam in Ventura County, California. Approximately $1 million will be utilized to finalize design activities and the remaining $14 million in Corps capability will be used to advance construction of the project. Of that amount, approximately $7,500,000 would be designated for construction activities associated with the high-flow bypass of the dam with the remaining $5,500,000 being utilized for the building of levees downstream from the site.

The Matilija Dam Ecosystem Restoration Project, authorized in Public Law 110–114, is a project of vital importance and consists of the removal of the no longer needed or functional 200-foot tall Matilija Dam, located on a tributary to the Ventura River. The dam is currently unusable as sediment has filled in its reservoir. Completion of the project will reopen 17.3 miles of unimpeded habitat for the endangered steelhead trout and other aquatic species. In addition, the project will restore over 2,800 acres of habitat that will support a wide variety of native species, including 25 special status species while replenishing area beaches by allowing sand (now trapped behind the Dam) to flow to coastal beaches upon the Dam's removal.

The removal of Matilija Dam will also provide extensive economic benefits in addition to the environmental benefits that will be accrued. Specifically, over the life of the project we can expect an increase in California's economic output of $250 million and the creation of 1,500 jobs for the $100 million investment in the construction of the project. In the more immediate future (3 years) there would be an economic benefit of $150 million and the creation of over 900 jobs making the project a sound investment in California and the Nation's economy.

This project is one of the largest dam removal projects in the Country and enjoys broad support from many local, State and Federal agencies. To remove the dam, 6 million cubic yards of sediments will be moved or recontoured and a high flow sediment bypass system will be constructed at a water diversion downstream. In addition, a silt removal system will be installed along the diversion canal. Furthermore, levees will be built in several places along the river channel to protect property from flooding due to the expected increases in stream channel elevation in the first years after removal of the dam. The project also involves removal of invasive plants and the installation of replacement water wells.

NAPA RIVER SALT MARSH—CORPS OF ENGINEERS, SAN FRANCISCO DISTRICT

For fiscal year 2010, we are seeking $8 million in construction funds to continue to advance this critical project that is nearly two-thirds complete. The only remaining work is that which was authorized for construction in Public Law 110–114 and must be undertaken by the U.S. Army Corps of Engineers. The funds requested would allow the Corps of Engineers to complete design and begin construction of their portion of the Napa River Salt Marsh Project which includes the restoration of Ponds 6–8. It is important to note that the project can be completed quickly as it only requires a total of $13 million to construct the Ponds 6–8 improvements over an estimated 2-year construction period.

Substantial funding during the current fiscal year is essential to ongoing project success as the local sponsors have spent their full share and have no additional State or local funds dedicated to the project to continue its implementation. State and local partners expended their share on completion of Phases I and II of the project. Phase I involved opening 3,000 acres of salt ponds (Ponds 3, 4, and 5) to full tidal action in 2006 and is the largest tidal restoration project in the San Francisco Bay to date. Phase II involved the restoration of 1,700 acres (Ponds 1/1A, and 2) to managed ponds for waterfowl and shorebirds in 2007. Without Federal funding this fiscal year, the project will continue to be halted, benefits will continue to be delayed and project costs will increase greatly.

The project is part of a larger environmental restoration effort to restore the Nation's second largest estuary the San Francisco Bay, and its watershed, to its natural state. This restoration effort is expected to improve the environmental sustainability of the Estuary while providing great scenic and recreational values for the local community. Federal funds are critically required for the completion of the project whose extensive benefits to the region include: providing extensive wetland habitat in San Francisco Bay; the beneficial use for recycled water in the North Bay; improved open space and recreational opportunities; and resolving urgent issues associated with deterioration of the site's levee, water control structures, and water quality.

Our request reflects Corps capability and funding will be utilized to complete design of Ponds 6–8. In addition, funding will initiate design of the recycled water pipeline, an item expressly included by Congress in the project's authorization. Funds will also be used to secure necessary permits and approvals and begin construction of Ponds 6–8.

The 10,000 acre Napa River Salt Marsh was purchased by the State of California from Cargill in 1994 and is managed by the California Department of Fish and Game. The State Coastal Conservancy has been the non-Federal sponsor working with the Corps on the Feasibility Study. The Corps' Feasibility Study was completed and the Chief's Report was signed in December 2004.

HAMILTON BEL-MARIN KEYS WETLAND RESTORATION PROJECT—CORPS OF ENGINEERS, SAN FRANCISCO DISTRICT

In fiscal year 2010, the California State Coastal Conservancy is seeking $18,500,000 in Construction funding for the Hamilton Bel-Marin Keys Wetland Restoration Project. The project was authorized by Congress in 1999 (Public Law 106–53) and our request reflects Corps capability for the project.

This project is of critical importance as it will provide nearly 700 acres of restored tidal and seasonal wetlands at a former Army base and provides much needed habitat for several threatened and endangered species; as well as, shorebirds and waterfowl migrating along the Pacific Flyway. Because the project requires large volumes of dredged sediment for completion, this project will result in a greatly reduced need to dispose of sediment in the Bay and Pacific Ocean, which has direct benefits to aquatic life. Furthermore, the project also beneficially uses dredged material from the San Francisco Bay which provides for increased navigation and maritime commerce, a much needed economic stimulus for the region. In addition to the extensive environmental and maritime navigation benefits, the project will also serve as a key driver for the regional economy as implementation and full funding is expected to bring approximately 304 jobs to Marin County, California.

The project was provided full funding in the Omnibus Appropriations Act of 2009 and as a result work is currently underway. As a result of this significant commitment, the majority of the required site preparation has been completed on the former Army Airfield, including the construction of miles of levees. The main runway and taxiways are now in the process of being buried under millions of cubic yards of clean dredged sediment. Subsequently, the easterly levee will be breached allowing tidal waters to once again flood the site. Significant progress has been made as over 2.4 million cubic yards being delivered to Hamilton as of January 2009. To complete the Airfield portion of the project an additional 5 million cubic yards of sediment is needed. Under the current schedule it is expected that completion of the Airfield portion of the project will occur between 2013 and 2015. Following completion of the Airfield, the Corps will work on the adjacent Antenna field and Bel-Marin Keys V property for a total project area of nearly 2,500 acres.

The project enjoys broad support from environmental groups, labor and maritime interests as well as local government in Marin County. Key supporters include the San Francisco Bay Joint Venture, the County of Marin, the Port of Oakland, the Bay Planning Coalition, the Bay Institute, the Save San Francisco Bay Association, the National Audubon Society, and many others.

SOUTH SAN FRANCISCO BAY SHORELINE STUDY—CORPS OF ENGINEERS, SAN FRANCISCO DISTRICT

The Conservancy is seeking $2,800,000 in Investigations funding to continue the Feasibility Study for this groundbreaking project that will provide tidal and fluvial flood protection to the south San Francisco Bay Area. The study was initiated in fiscal year 2005 and has been ongoing thanks to the support of the subcommittee. In fact, in the Omnibus Appropriations Act of 2009 the project received $2,800,000 representing full capability for the project.

This project is of national significance as it will provide tidal and fluvial flood protection for the south San Francisco Bay Area, including Silicon Valley, protecting approximately 42,800 acres, 7,400 homes and businesses, and significant urban infrastructure, including major highways, hospitals and airport facilities. In addition, the project is being pursued in conjunction with the 2nd largest wetlands restoration project occurring in the United States and as such will provide extensive habitat for federally endangered species and migratory waterfowl.

To continue to advance this important study it is imperative that local interests and the Federal Government work together to ensure a reliable funding stream for the project. To that end, continued Federal funds are necessary to keep the project on schedule as the Conservancy's co-local sponsor for the project, the Santa Clara Valley Water District, will be approaching voters in 2012 to secure local funding for the construction of the recommended project. When this occurs, the District needs to have a deliverable product that they can showcase to voters given the fact that California's Proposition 13 requires that any new taxation be approved by a two-thirds majority of voters.

During fiscal year 2010 we are seeking $2,800,000 in accordance with Corps of Engineers capabilities for the project during the current fiscal year. Funds in fiscal year 2010 are expected to be used for the following activities: Hydrology, Hydraulics and Coastal Analysis—$1 million; Economics Analysis—$250,000; Plan Formulation—Alternatives Development $250,000; Habitat Evaluation Analysis—$150,000; NEPA—EIS Development—$400,000; Engineering & Design/Geotech—$200,000; Project Management—$400,000 and Surveys & Mapping—$150,000.

The project enjoys substantial support among Federal, State and local agencies with the following agencies serving as active project partners: California State Coastal Conservancy; California Department of Fish and Game; U.S. Fish and Wildlife Service; U.S. Army Corps of Engineers, NOAA, U.S. Geological Survey; Santa Clara Valley Water District; Alameda County Flood Control and Water Conservation District; Hewlett, Packard, and Moore Foundations and the Goldman Fund. The project is also supported by the San Francisco Bay Joint Venture, the city of San Jose, The Bay Institute, Save the Bay, the Bay Trail Program, the National Audubon Society, and many other local governments, environmental groups, community groups, businesses, and recreation organizations.

PREPARED STATEMENT OF THE SANTA CLARA VALLEY WATER DISTRICT

SUMMARY

This statement urges the subcommittee's support for a fiscal year 2010 appropriation of $100,000 to initiate a Reconnaissance Study of the Coyote Creek Watershed.

STATEMENT OF SUPPORT—COYOTE CREEK WATERSHED STUDY

Background.—Coyote Creek drains Santa Clara County's largest watershed, an area of more than 320 square miles encompassing most of the eastern foothills, the city of Milpitas, and portions of the Cities of San Jose and Morgan Hill. It flows northward from Anderson Reservoir through more than 40 miles of rural and heavily urbanized areas and empties into south San Francisco Bay.

Prior to construction of Coyote and Anderson Reservoirs, flooding occurred in 1903, 1906, 1909, 1911, 1917, 1922, 1923, 1926, 1927, 1930 and 1931. Since 1950, the operation of the reservoirs has reduced the magnitude of flooding, although flooding is still a threat and did cause damages in 1982, 1983, 1986, 1995, and 1997. Significant areas of older homes in downtown San Jose and some major transportation corridors remain susceptible to extensive flooding. The federally-supported lower Coyote Creek Project (San Francisco Bay to Montague Expressway), which was completed in 1996, protected homes and businesses from storms which generated record runoff in the northern parts of San Jose and Milpitas.

The proposed Reconnaissance Study would evaluate the reaches upstream of the completed Federal flood protection works on lower Coyote Creek.

Objective of Study.—The objectives of the Reconnaissance Study are to investigate flood damages within the Coyote Creek Watershed; to identify potential alternatives for alleviating those damages which also minimize impacts on fishery and wildlife resources, provide opportunities for ecosystem restoration, provide for recreational opportunities; and to determine whether there is a Federal interest to proceed into the Feasibility Study Phase.

Study Authorization.—In May 2002, the House of Representatives Committee on Transportation and Infrastructure passed a resolution directing the Corps to ". . . review the report of the Chief of Engineers on Coyote and Berryessa Creeks . . . and other pertinent reports, to determine whether modifications of the recommendations contained therein are advisable in the interest of flood damage reduction, environmental restoration and protection, water conservation and supply, recreation, and other allied purposes . . .".

Fiscal Year 2006 Administration Budget Request and Funding.—The Coyote Watershed Study was one of only three "new start" studies proposed for funding nationwide in the administration fiscal year 2006 budget request. Congress did not include funding for the study in the final fiscal year 2006 appropriations bill, or in any subsequent bills.

Fiscal Year 2009 Funding.—Congress did not appropriate any funding to the project in fiscal year 2009.

Fiscal Year 2010 Funding Recommendation.—It is requested that the Congressional Committee support an appropriation of $100,000 to initiate a multi-purpose Reconnaissance Study within the Coyote Creek Watershed.

SUMMARY

This statement urges the subcommittee's support for a fiscal year 2010 appropriation of $2.25 million to complete the General Reevaluation Report, update of environmental documents, and commence design work for the Berryessa Creek Flood Protection Project element of the Coyote/Berryessa Creek Project.

STATEMENT OF SUPPORT—COYOTE/BERRYESSA CREEK PROJECT—BERRYESSA CREEK PROJECT ELEMENT

Background.—The Berryessa Creek Watershed is located in northeast Santa Clara County, California, near the southern end of the San Francisco Bay. A major tributary of Coyote Creek, Berryessa Creek drains 22 square miles in the city of Milpitas and a portion of San Jose.

On average, Berryessa Creek floods once every 4 years. The most recent flood in 1998 resulted in significant damage to homes and automobiles. The proposed project on Berryessa Creek, from Calaveras Boulevard to upstream of Old Piedmont Road, will protect portions of the cities of San Jose and Milpitas. The flood plain is largely urbanized with a mix of residential and commercial development. Based on the U.S. Army Corps of Engineers (Corps) 2005 report, a 1 percent or 100-year flood could potentially result in damages exceeding $179 million. Benefit-to-cost ratios for the six project alternatives being evaluated range from 2:1 to 7.3:1.

Study Synopsis.—In January 1981, the Santa Clara Valley Water District (District) applied for Federal assistance for flood protection projects under section 205 of the 1948 Flood Control Act. The Water Resources Development Act of 1990 authorized construction on the Berryessa Creek Flood Protection Project as part of a combined Coyote/Berryessa Creek Project to protect portions of the cities of Milpitas and San Jose.

The Coyote Creek element of the project was completed in 1996. The Berryessa Creek Project element proposed in the Corps' 1987 feasibility report consisted primarily of a trapezoidal concrete lining. This was not acceptable to the local community. The Corps and the District are currently preparing a General Reevaluation Report which involves reformulating a project which is more acceptable to the local community and more environmentally sensitive. Project features will include setback levees and floodwalls to preserve sensitive areas (minimizing the use of concrete), appropriate aquatic and riparian habitat restoration and fish passage, and sediment control structures to limit turbidity and protect water quality. The project will also accommodate the city of Milpitas' adopted trail master plan. Estimated total costs of the General Reevaluation Report work are $6.5 million, and should be completed in 2009.

Fiscal Year 2009 Funding.—Congress appropriated $138,000 to the project in fiscal year 2009.

Fiscal Year 2010 Funding Recommendation.—Based on the continuing threat of significant flood damage from Berryessa Creek and the need to complete the General Reevaluation Report, it is requested that the Congressional Committee support

an appropriation of $2.25 million for the Berryessa Creek Flood Protection Project element of the Coyote/Berryessa Creek Project.

PREPARED STATEMENT OF THE CALAVERAS COUNTY WATER DISTRICT

PROJECT REQUESTS

	Amount
NEW HOGAN WATER DISTRIBUTION SYSTEM (Construction General—section 219)	$600,000
COSGROVE CREEK FLOOD CONTROL PROJECT (Construction General—section 205)	200,000
CALAVERAS COUNTY REGIONAL WATER/WASTEWATER AND RECYCLED WATER FACILITIES PROGRAM—PHASE II (Construction General—section 5039)	600,000

OVERVIEW

On behalf of the Calaveras County Water District, I want to thank the subcommittee for this opportunity to present our priorities for fiscal year 2010 and, at the same time, express our appreciation for your support of the District's projects in recent years. The Calaveras County Water District is respectfully seeking the following requests before the Senate Energy and Water Development Appropriations Subcommittee from the U.S. Army Corps of Engineers during fiscal year 2010. We are seeking $600,000 from the Corps of Engineers Construction General Account section 219 for our New Hogan Water Distribution System request; $200,000 from the Corps of Engineers Construction General Account section 205 for the Cosgrove Creek Flood Control Project; and $600,000 from the Corps Construction General Account section 5039 for the Calaveras County Regional Water/Wastewater and Recycled Water Facilities Program Phase II.

As background, our agency, the Calaveras County Water District (CCWD) was founded in the fall of 1946 and was organized under the laws of the State of California as a public agency for the purpose of developing and administering the water resources in Calaveras County. Therefore, CCWD is a California Special District and is governed by the California Constitution and the California Government and Water Codes. CCWD is not a part of, or under the control of, the County of Calaveras. CCWD was formed to preserve and develop water resources and to provide water and wastewater service to the citizens of Calaveras County.

Under State law, CCWD, through its board of directors, has general powers over the use of water within its boundaries. These powers include, but are not limited to: the right of eminent domain, authority to acquire, control, distribute, store, spread, sink, treat, purify, reclaim, process and salvage any water for beneficial use, to provide sewer service, to sell treated or untreated water, to acquire or construct hydroelectric facilities and sell the power and energy produced to public agencies or public utilities engaged in the distribution of power, to contract with the United States, other political subdivisions, public utilities, or other persons, and subject to the California State Constitution, levy taxes and improvements.

NEW HOGAN WATER DISTRIBUTION PROJECT

CCWD is seeking $600,000 in fiscal year 2010 for the New Hogan Water Distribution Project, a multi-phased project that will improve the region's water supply, significantly increase and protect water quality and provide significant environmental restoration that will greatly increase habitat for local wildlife while increasing recreational opportunities for the local community. The project will construct infrastructure to convey surface water to existing and expanding agricultural acreage in western Calaveras County. The area currently relies on a diminishing groundwater supply, which is experiencing water quality problems and has been identified by the State as an overdrafted groundwater basin. The project will include monitoring facilities to continually evaluate the region's sensitive groundwater basin and its response to conjunctive use operation and will also include enhanced modeling tools that evaluate the effectiveness of planned or proposed facilities for expanding conjunctive use in the region.

The project will provide a sustainable water supply for the western Calaveras County region experiencing declining groundwater levels, water quality deterioration, expanding agriculture, significant population growth, and the continuing threat of drought. Infrastructure will be built to convey surface water from existing reservoirs and water rights and entitlements permitted or contracted by the Calaveras County Water District to areas at greatest risk for groundwater supply

problems. Through introduction of surface water planned decades ago, the Calaveras County Water District will introduce conjunctive use to increase water supply reliability for all surface water and groundwater users within the western Calaveras County region. The project will benefit all of California as it will minimize the losses of naturally occurring springs and will improve stream-flow conditions for river tributaries of the Sacramento-San Joaquin River Delta, which provides two-thirds of the State of California with water. Finally, water conservation and wastewater recycling are critical elements that can reduce demands or stretch existing water supplies. Assessment of public outreach and environmental documentation needs will also be performed, as identified in a project management plan.

Cost Breakdowns for this project in fiscal year 2010 are listed as follows: Negotiation Project Partnership Agreement (PPA) and initial planning, design, and construction contract $50,000; develop Calaveras-Mokelumne Master Plan Concept $50,000; water supply and demand analysis $75,000; alternatives formulation and analysis $175,000; environmental program development $75,000; development of institutional partnerships and public outreach, $100,000; development of Feasibility Report $75,000.

COSGROVE CREEK FLOOD CONTROL PROJECT

CCWD, in conjunction with Calaveras County, is seeking $200,000 in the Construction General section 205 account for the Cosgrove Creek Flood Control Project. The project will address flooding that occurs along the lower reaches of the creek, as well as flooding that occurs on Spring Creek. Flooding in these areas impacts over 400 people and 100 structures located in the 100-year floodplain. The project will attenuate peak flows, address the beneficial use of peak flows, stabilize creek banks, improve natural conditions favorable to wetlands and riparian habitat, and increase recreational opportunities in the area. In addition to providing critical flood control for the region, the project will provide a number of ancillary benefits including; the beneficial use of flood flows including sprayfields, conjunctive use of recycled water and wetlands restoration. Further, the project will provide additional riparian habitat and much-needed recreational opportunities through the creation of hiking/riding trails and numerous athletic fields for use by the local community.

CALAVERAS COUNTY REGIONAL WATER/WASTEWATER AND RECYCLED WATER FACILITIES PROGRAM—PHASE II

CCWD third and final priority for fiscal year 2010 is a request for $600,000 to support the Calaveras County Regional Water/Wastewater and Recycled Water Facilities Program Phase II, a multi-phase, collaborative project to investigate strategic opportunities to correct water and wastewater utility deficiencies along the Highway 4 corridor in the Stanislaus River Watershed of Calaveras County.

Utility regionalization and improved coordination are needed to support sustainable practices in the Sierra Nevada foothill communities. This project would create partnerships between local, State, and Federal agencies so that infrastructure improvements, replacement needs, and growth decisions can be coordinated in a manner that respects connections between water, wastewater, land use, and development within the watershed thereby greatly enhancing the utilization and safeguarding of our region's water resources.

To accomplish these objectives CCWD will partner with Calaveras County, the city of Angels, Murphys Sanitary District, Union Public Utility District, and the Utica Power Authority. Through the identification of particular problem areas and collaboration with our local partners a "living" model will be developed to examine strategies for regionalizing water and wastewater facilities. A technical team consisting of project partners will develop preliminary concept plans based on shared goals, objectives, and priorities. Information will be circulated among all stakeholders and strong community involvement plan will be put forth that will incorporate the suggestions of the public and interested non-governmental organizations. This original model will then be further refined to evaluate concepts achieving maximum beneficial use to ensure a sustainable, cost-effective concept plan emerges for regional watershed implementation.

Cost breakdowns for this critical project in fiscal year 2010 are listed as follows: Negotiation of PPA and Initial planning, design, and construction contract $50,000; development of regional water/wastewater and recycled water master plan concept $50,000; summary of existing facilities and regulatory setting $50,000; evaluation of wastewater and water supply needs $75,000; formulation and evaluation of alternatives $200,000; development of institutional partnerships and public outreach $100,000; and reparation of Feasibility Study $75,000.

PREPARED STATEMENT OF THE IZAAK WALTON LEAGUE OF AMERICA

The Izaak Walton League of America appreciates the opportunity to submit testimony concerning appropriations for fiscal year 2010 for programs under the jurisdiction of the subcommittee. The League is a national, nonprofit organization founded in 1922. We have nearly 37,000 members and 270 community-based chapters nationwide. Our members are committed to advancing common sense policies that safeguard wildlife and habitat, support community-based conservation, and address pressing environmental issues. The following pertains to programs administered by the U.S. Army Corps of Engineers.

CORPS OF ENGINEERS, OPERATIONS AND MAINTENANCE, UPPER MISSISSIPPI RIVER

The League supports strong financial efforts for ecosystem restoration for the Upper Mississippi River (UMR). We have supported the Environmental Management Program (EMP) since its inception and continue to support this vital restoration program. EMP should be fully funded at its authorized level of $33.2 million and the current restriction for starting new EMP projects should be lifted. It is important to note that even this level of investment can serve only to slow the pace of UMR degradation, not achieve net restoration.

The League has also strongly expressed its opinion that the large-scale navigation modifications included in the Recommended Plan for the Upper Mississippi Navigation and Ecosystem Sustainability Program (NESP), as authorized by the Water Resources Development Act of 2007, have not been justified by the Corps and should not be pursued. Previous reviews from the National Academy of Sciences and the Assistant Secretary of the Army, Civil Works found that the navigation construction component of NESP was not economically justifiable.

The League has strong roots in the Upper Mississippi River region. Protecting the basin has been a key issue for our members since we led the fight to create the Upper Mississippi River Fish and Wildlife Refuge in 1924. The League has spearheaded efforts to reform the lock and dam navigation system to ensure that flows and habitat remain as natural as possible. We also work to promote sustainable agriculture practices and implement farm conservation programs to reduce polluted runoff. Our testimony reflects many decades of experience on the Upper Mississippi River and our direct 15-year involvement with the Upper Mississippi River—Illinois Waterway (UMR–IWW) navigation study.

The Upper Mississippi River is one of the most complex ecosystems on earth. It provides habitat for 50 species of mammals, 45 species of reptiles and amphibians, 37 species of mussels, and 241 species of fish. The need for ecosystem restoration is unquestionable. As the Corps correctly stated in its study of navigation expansion, this ecosystem is "significantly altered, is currently degraded, and is expected to get worse." Researchers from the National Academy of Sciences have determined that river habitat is disappearing faster than it can be replaced through existing programs such as the Corps' Environmental Management Program, which was authorized at $33.2 million annually by Congress in 1999, but has never received full appropriations. As habitat vanishes, scientists warn that many species will decline and some will disappear.

Our Nation relies on a healthy Mississippi River for commerce, recreation, drinking water, food supply and power. More than 12 million people annually recreate on and along the Upper Mississippi River spending $1.2 billion and supporting 18,000 jobs. More people recreate on the Upper Mississippi than visit Yellowstone National Park. Notably, barge traffic has remained static on the river for more than two decades with real declines in recent years.

The Water Resources Development Act of 2007 authorizes the Navigation and Ecosystem Sustainability Program (NESP) for the Upper Mississippi River. NESP allocates $2.2 billion for new navigation-related construction and $1.7 billion for ecosystem restoration over an initial 15-year project phase. Included in the $2.2 billion is over $256 million for small-scale and non-structural navigation projects that we fully support. However, we have consistently opposed the unnecessary spending of tax dollars on the economically unsound new locks, a position further bolstered by the continuing annual declines in barge traffic on the UMR.

In assembling the UMR–IWW navigation study, the Corps recognized the critical need for UMR ecosystem restoration work and encouraged Congress to invest approximately $130 million annually in Upper Mississippi River habitat restoration efforts. With this demonstrated need in mind, the League strongly encourages the subcommittee to prioritize investment in ecosystem restoration. Appropriating significant funding for restoration will provide near-term economic stimulus in communities along the UMR and long-term conservation and economic benefits for the region and the Nation.

The administration's budget does not request funding for NESP. The League supports increasing fiscal year 2010 NESP navigation funding to adequately cover the cost of initiating small-scale and non-structural navigation projects only. We strongly support increasing total ecosystem restoration funding incrementally, in an efficient and effective manner, to reach the total $130 million investment as soon as feasible.

CORPS OF ENGINEERS, OPERATIONS AND MAINTENANCE, MISSOURI RIVER

For fiscal year 2010, we urge the subcommittee to provide at least $70 million as the President has specifically requested for ecosystem restoration along the Missouri River. We believe it is essential to provide this minimum amount because the final fiscal year 2009 appropriation is significantly below the request and the Corps identified approximately $26 million in restoration projects that could commence quickly to stimulate local economies, but these were not fully funded by the American Recovery and Reinvestment Act. In addition, through the Missouri River Recovery Program, the Army Corps has identified $105 million in projects, which have been designed and approved, that it could implement next fiscal year. With at least $70 million, the Corps and U.S. Fish and Wildlife Service could begin important ecosystem restoration efforts that will produce long-term ecological and economic benefits, as well as provide economic stimulus throughout fiscal year 2010 by allowing the agencies to move forward with shovel-ready projects.

The Missouri River basin encompasses land in 10 States and covers one-sixth of the continental United States. The Missouri, America's longest river, is one of the most altered ecosystems on earth. While recovery and restoration efforts have begun, much more needs to be done. League members, especially those in Iowa, Nebraska and South Dakota, want to see the recovery efforts continue and expand.

The Corps, Fish and Wildlife Service and many State agencies have been working on restoring habitat for fish and wildlife species along the river. This work is critical for the Interior Least Tern and Pallid Sturgeon, which are listed as endangered under the Endangered Species Act, and the Piping Plover, which is listed as threatened. Moreover, the positive impacts of restoration extend to all fish and wildlife throughout the region.

A recent study conducted by the Fish and Wildlife Service near Lisbon Bottoms in Missouri showed that over twice as many fish species were utilizing the created shallow water habitat (SWH) areas as the main channelized section of the river. A Corps' study has shown that the emergent sandbar habitat (ESH) projects have had tremendous response from nesting terns and plovers. These habitat restoration projects are working with the river—not against it.

These projects have also been a boon for recreation along portions of the river. Anglers, hunters, boaters and others have been using some of these areas proving the old adage "if you build it, they will come." Although the majority of the population lives in the lower basin, most recreational spending is currently occurring in the upper basin because facilities and opportunities are more abundant. These developed habitat projects are bringing people back to the river in the lower Missouri basin.

In addition to boosting the economy through tourism, restoration projects can provide near-term economic stimulus in small communities throughout the region. As Congress and the administration considered the stimulus package earlier this year, the Corps identified $26 million in restoration projects that could commence this spring and summer in Nebraska, Iowa, South Dakota and other basin States. In general, these projects involved removing barriers to fish passage on the Yellowstone River in Montana as well as restoring and creating habitat for terns, plovers and pallid sturgeon in the middle and lower basin. To perform this work, the Corps would contract with local construction companies, which would create or maintain jobs and inject dollars into the local economy through purchases of materials, fuel, food and lodging. Although these projects were not funded by the Recovery Act, with an appropriation of at least $70 million, the Corps could implement some of them next year. Doing so could help propel economic recovery at the community level at a time when we hope the national economy will also be improving.

The League encourages the subcommittee to provide at least $70 million for recovery and restoration efforts along the Missouri River. Benchmarks have been set by the Biological Opinion establishing goals for habitat restoration. With adequate funding and a lot of hard work on the ground, we can meet these goals and restore critical segments of America's longest river.

We appreciate the opportunity to submit testimony and look forward to working with the subcommittee to strengthen the investment in ecosystem restoration and recovery along the Upper Mississippi and Missouri rivers.

PREPARED STATEMENT OF THE LITTLE RIVER DRAINAGE DISTRICT

Dear Congressman Visclosky, my name is Dr. Sam M. Hunter, DVM of Sikeston, Missouri. I am a veterinarian, landowner, farmer and resident of Southeast Missouri.

I am the President of the Little River Drainage District, the largest such entity in the Nation. Our District serves as an outlet drainage and flood control District to parts of seven counties in Southeast Missouri. We provide flood control protection to a sizable area of Northeast Arkansas as well. Our District is solely tax supported by more than 3,500 private landowners in Southeast Missouri.

My remarks will be directed toward the Mississippi River and Tributaries Project (MR&T) and the St. Francis River Basin portion of the MR&T. Those funds when properly expended are investments yielding a return of substantial benefits to the American taxpayer throughout this Nation. They are used to prevent flooding to much of our valuable farmland, to industrial sites, and to upgrade our ever aging locks and dam system on our navigable streams which will prevent unscheduled lock closures, modernize our hydro-electric plants, and restore some of our environmental assets. MR&T authorized by Congress in 1928 and still not completed is returning back to our Nation $25 for every $1 expended. What a good investment!!

We are pleased to learn of the recent passage of the Omnibus bill for fiscal year 2009 and the Stimulus bill. The Omnibus bill provides $375 million for the MR&T Project for fiscal year 2009. The stimulus funding will likewise provide additional funds to improve much needed work on this excellent project. The Corps has a stated capability exceeding both amounts and will be able to execute those funds promptly.

Many jobs will be realized and many products will be purchased throughout the entire Mississippi Valley and the watershed which discharge into this system. We must put people back to work and this should help in some small way. However, there still remains room for more funding. This District supports the request of the Mississippi Valley Flood Control Association for funding levels at $500 million for the MR&T Project. This project as well as all of the subsidiary projects within are returning back to the U.S. Treasury a minimum of $6 for each $1 invested.

We believe Congress needs to intervene and reverse the trend of OMB, and of past administrations. We have not seriously invested in our waterway infrastructure for decades but we MUST. Local economies will be affected positively by these investments. Local labor will be used as well as local businesses who will provide needed materials. This would be a major boost to our economy. Each year OMB and recent administrations have submitted low budget amounts for this worthwhile project and we have had to rely on Congress to "fix" the problem. You should not be burdened with this task. Someone needs to inform OMB what projects need funding which are assets to our Nation and not a liability.

We must prioritize projects and eliminate projects that are not returning benefits back to this Nation. We must have our Federal Government live up to the commitments they have made to the citizens of this Nation. Private interests have made many investments based upon faith in the Federal Government following through on what it promised and what they had been told would be provided to them within a reasonable period of time. If a project is to be funded entirely by the Federal Government as directed by Congress then we must fulfill that obligation. If local interest is to provide a portion of the cost then local interest must meet that mandate as well. However, we do not need to hold any projects up because local interests are not financially able to meet their cost sharing needs provided that project returns a benefit back to this Nation. Let us move forward with a plan and let us work that plan and rebuild and bring our waterway infrastructure into the 21st century properly.

Investing in our waterways is a great way to stimulate the economy, which currently is very much needed, and at the same time be building and making investments into a system for the future which will return back more dollars than expended. We petition you to give this vital industry of our Nation a strong endorsement and do all you can to ensure our waterways system and carriers stay competitive with our foreign competitors.

I have the following comments for your benefit and consideration:

STIMULUS BILL FUNDING

The Corps stated a capability to execute $12–$15 billion yet were only allocated $4.6 billion. This amount is gratefully appreciated but is a mere "down payment" to improve and upgrade our deteriorated infrastructure. Thousands of jobs could be generated should the Corps capability be met. The Corps continues the premier en-

gineering and construction arm of the Federal Government. We need to let them do what they do best.

INFRASTRUCTURE

The current administration stated often during its campaign and after that a genuine concerted priority would be to invest in this country's future, namely, its infrastructure.

Our Federal road systems are crumbling! We must not wait for bridges to fail before we act. We need to move forward across our entire Nation upgrading our Federal highway system in its entirety. This will take long term commitments not just a "stimulus" now and then. We need to put a plan in place, work the plan and fund it properly.

Are we truly interested in fuel independence—a cleaner environment—a better economy? If we are why don't we have someone step forward and be a champion for our "waterways" system? We have locks and dams which are an average of 50 years old. Parts are having to be fabricated since they are no longer manufactured. Tows are having to be broken up to pass because our locks and dams are too short and not modernized. Many undue delays are occurring. This does not permit our carriers to compete fairly with the foreign shipping industry. We must start a concerted effort to improve this part of our Nation's infrastructure.

Locks, dams, hydropower, recreation, flood control, water supplies and all other benefits from the construction, operation and maintenance of these features on our rivers benefit our entire Nation not just a few. It is a national asset and it must be operated and funded as a national benefit. Private industry can not and will not operate this system fairly and in the best interest of our Nation.

Environmentally moving goods and freight throughout our Nation via water is much cleaner, less intrusive and far more environmentally acceptable than highways or rail. Noise pollution, air pollution, land pollution are substantially less when we move the mass amount of goods possible by water.

Fuel efficiency comparison is a "no brainer"! For instance 1 gallon of fuel moves 155 tons of freight by truck, 413 tons of freight by rail and 576 tons of freight by water. What part of this do we not understand? Why can't we realize such an endeavor would reduce much of our fuel needs and take much pressure off our highway system?

Economically investing wisely in our waterways effects much of our Nation—not just a regional portion. Consider it being possible to board a waterborne vessel at the Port of New Orleans, Louisiana and one can touch 36 States of this Nation and 6 provinces in Canada without ever getting onto land. Over 75 percent of our population lives along water. Only two of our major cities are not on water, namely, Atlanta, Georgia and Denver, Colorado. With the many ports throughout the Mississippi Valley, which network many more people inland, it is evident many local economies will be benefitted when investments are made in our water infrastructure.

We seem to be ready, willing and capable of improving the infrastructure of other Nations at the expense of our taxpayers but seem reluctant to do the same for our Nation. It is far past time to reward the American taxpayer with a return for the money he provides each year and stop using those funds to benefit those Nations who are our enemies.

It has been estimated our waterway infrastructure needs $100–$120 billion to modernize, upgrade and be made functional. Lets start now by setting a 10 year goal to modernize that system and then plan to meet that goal and exceed same when possible. Currently we are spending $13–$15 billion per month to fight terrorism in Iraq and Afghanistan which is more spent in 1 year of what is needed to bring our waterways up to a finished plan. Perhaps we could cut the 10 year plan to even 5 years by eliminating much of that funding. Lets try!

I wish to thank you very much for your time and kind attention and for taking the time to review the above. We would be very appreciative of anything this subcommittee can do to help us improve our environment, improve our livelihood, and improve the area in which we live and work which ultimately is good for America. We are also very appreciative of all this subcommittee has done for us in the past. We trust you will hear our pleas once more and act accordingly.

PREPARED STATEMENT OF MAYOR SARA PRESLER, CITY OF FLAGSTAFF, ARIZONA

Chairman Dorgan, Ranking Member Bennett, and distinguished members of the subcommittee, thank you for allowing me to testify on behalf of the city of Flagstaff, Arizona in support of $23 million in the Army Corps of Engineers budget for the

Rio de Flag flood control project in fiscal year 2010. The Rio de Flag flood control project is critically important to the city, to northern Arizona, and, ultimately, to the Nation.

As you may know, Mr. Chairman, with this subcommittee's help over the last several fiscal years, Rio de Flag received more than $15 million to continue construction on this important project. We are extremely grateful that the subcommittee boosted this project well above the President's request every year, and we would appreciate your continued support for this project in fiscal year 2010.

Furthermore, the amount of money invested in this project by the Federal Government—approximately $54 million (authorized by WRDA)—will be saved exponentially in costs to the Federal Government in the case of a large and catastrophic flood, which could be more than $450 million. It will also promote economic growth and redevelopment along areas that are currently underserved because of the flood potential.

Like many other projects under the Army Corps's jurisdiction, Rio de Flag received no funding in the President's fiscal year 2010 budget, although the Corps has expressed a capability of $23 million to continue construction on the project and unwavering commitment to the project. We are hopeful that the subcommittee will fund the Rio de Flag project at $23 million when drafting its bill in order to keep the project on an optimal schedule.

Flooding along the Rio de Flag dates back as far as 1888. The Army Corps has identified a Federal interest in solving this long-standing flooding problem through the Rio de Flag, Flagstaff, Arizona—Feasibility Report and Environmental Impact Study (EIS). The recommended plan contained in this feasibility report was developed based on the following opportunities: (1) flood control and flood damage reduction; (2) environmental mitigation and enhancement; (3) water resource management; (4) public recreation; and (5) redevelopment opportunities. This plan will result in benefits to not only the local community, but to the region and the Nation.

The feasibility study by the Corps of Engineers has revealed that a 500-year flood could cause serious economic hardship to the city. In fact, a devastating 500-year flood could damage or destroy approximately 1,500 structures valued at more than $450 million. Similarly, a 100-year flood would cause an estimated $100 million in damages. In the event of a catastrophic flood, over half of Flagstaff's population of more than 60,000 would be directly impacted or affected.

In addition, a wide range of residential, commercial, downtown business and tourism, and industrial properties are at risk. Damages could also occur to numerous historic structures and historic Route 66. The Burlington Northern & Santa Fe Railway (BNSF), one of the primary east-west corridors for rail freight, could be destroyed, as well as U.S. Interstate 40, one of the country's most important east-west interstate links. Additionally, a significant portion of Northern Arizona University (NAU) could incur catastrophic physical damages, disruptions, and closings. Public infrastructure (e.g., streets, bridges, water, and sewer facilities), and franchised utilities (e.g., power and telecommunications) could be affected or destroyed. Transportation disruptions could make large areas of the city inaccessible for days.

Mr. Chairman, the intense wildfires that have devastated the West during the last several years have only exacerbated the flood potential and hazard in Flagstaff. An intense wildfire near Flagstaff could strip the soil of ground cover and vegetation, which could, in turn, increase runoff and pose an even greater threat of a catastrophic flood.

In short, a large flood could cripple Flagstaff for years. This is why the city believes it is important to ensure that this project remains on schedule and that the Corps is able to utilize its expressed capability of $23 million in fiscal year 2010 for construction of this flood control project.

In the city's discussions with the Corps, both the central office in Washington and its Los Angeles District Office also believe that the Rio de Flag project is of the utmost importance and both offices believe the project should be placed high on the subcommittee's priority list. We are hopeful that the subcommittee will consider this advice and also place the project high on its priority list and fully fund the project at $23 million for fiscal year 2010.

It is important to note that the city has secured the necessary property rights to begin construction, and the city is prepared to assume the costs for the non-Federal portion of the cost-sharing agreement.

The city of Flagstaff, as the non-Federal sponsor, is responsible for all costs related to required Lands, Easements, Rights-of-Way, Relocations, and Disposals (LERRD's). The city has already secured the necessary property rights to begin construction in 2004. Implementation of the city's Downtown and Southside Redevelopment Initiatives ($100 million in private funds) are entirely dependent on the successful completion of the Rio de Flag project. The Rio de Flag project will also pro-

vide a critical missing bike/pedestrian connection under Route 66 and the BNSF Railroad to replace the existing hazardous at grade crossings.

Mr. Chairman, the Rio de Flag project is exactly the kind of project that was envisioned when the Corps was created because it will avert catastrophic floods, it will save lives and property, and it will promote economic growth. In short, this project is a win-win for the Federal Government, the city, and the surrounding communities.

In conclusion, the Rio de Flag project should be considered a high priority for this subcommittee, and I encourage you to support full funding of $23 million for this project in the fiscal year 2010 Energy and Water Development Appropriations bill. Thank you in advance for your consideration.

PREPARED STATEMENT OF THE BOARD OF MISSISSIPPI LEVEE COMMISSIONERS

Mr. Chairman and members of the subcommittee, this statement is prepared by Peter Nimrod, Chief Engineer for the Board of Mississippi Levee Commissioners, Greenville, Mississippi, and submitted on behalf of the Board and the citizens of the Mississippi Levee District. The Board of Mississippi Levee Commissioners is comprised of seven elected commissioners representing the counties of Bolivar, Issaquena, Sharkey, Washington, and parts of Humphreys and Warren counties in the Lower Yazoo Basin in Mississippi. The Board of Mississippi Levee Commissioners is charged with the responsibility of providing protection to the Mississippi Delta from flooding of the Mississippi River and maintaining major drainage outlets for removing the flood waters from the area. These responsibilities are carried out by providing the local sponsor requirements for the congressionally authorized projects in the Mississippi Levee District. The Mississippi Levee Board and the Mississippi Valley Flood Control Association support an appropriation of $500 million for fiscal year 2010 for the Mississippi River and Tributaries Project. This is the minimum amount that we consider necessary to allow for an orderly completion of the remaining work in the Valley and to provide for the operation and maintenance, as required, to prevent further deterioration of the completed flood control and navigation work.

It is apparent that the administration loses sight of the fact that the Mississippi River and Tributaries Project provides protection to the Lower Mississippi Valley from waters generated across 41 percent of the Continental United States. These waters flow from 31 states and 2 provinces of Canada and must pass through the Lower Mississippi Valley on its way to the Gulf of Mexico. We will remind you that the Mississippi River and Tributaries Project is one of, if not the most cost effective project ever undertaken by the United States Government. The foresight of the Congress in their authorization of the many features of this project is exemplary.

The many projects that are part of the Mississippi River and Tributaries Project not only provide protection from flooding in the area, but the award of construction contracts throughout the Valley provides assistance to the overall economy of this area. The employment of the local workforce and purchases from local vendors by the contractors help stabilize the economy in one of the most impoverished areas of our country.

Thanks to the additional funding provided by the Congress over the last several years over and above the administration's budget, work on the Mainline Mississippi River Levee Enlargement Project is continuing. Of the original 69 miles of deficient levees in the Mississippi Levee District, 23.2 miles of work has been completed, 12.2 miles are currently under contract, and another 4.7 miles will be awarded in late Summer, 2009. We are requesting $69.972 million for construction on the Mainline Mississippi River Levees in the Lower Mississippi Valley Division which will allow the Vicksburg and Memphis districts to keep existing contracts on schedule and award contracts to avoid any future unnecessary delays in completing this vital project. We are all well aware that the Valley some day will have to endure a Project Flood, we just don't know when. We must be prepared.

The President's fiscal year 2010 budget did not include funding for any construction projects within the Yazoo Basin. This action is especially difficult to understand during a time when our Nation needs an economic boost. These are all projects authorized and funded so wisely by the Congress. All of these projects are encompassed in the footprint of the Delta Regional Authority, an area recognized by the Congress as requiring special economic assistance to keep pace with the rest of our great Nation. We can not lose sight of the fact that all of these projects are required to return more than a dollar in benefits for each dollar spent.

The Final Report for the Yazoo Backwater Project was released in late 2007. The Yazoo Backwater Project will provide economic and environmental benefits to parts

of six counties in the south Mississippi Delta. This project will build a pump that will evacuate floodwater that is generated over 4,093 square miles in the Mississippi Delta. The pump will lower the 100-year flood event by 4.5 feet thereby reducing urban and rural structural damages, providing benefits to the remaining agricultural lands, and reducing the frequency and duration of floods. Reforestation easements will be purchased on up to 55,600 of existing agricultural land which will provide benefits in every environmental category—wetlands, terrestrial, aquatics, and waterfowl resources as well as vastly improving water quality. The recommended plan for the Yazoo Backwater Project will balance economics with the environment. This is a model project that should be the standard for future public works projects in the United States. On August 31, 2008, EPA wrongly used it's authority under section 404(c) of the Clean Water Act (CWA) to veto the Yazoo Backwater Project even though it is exempt by section 404(r) of the CWA. We are requesting this project be funded by the Congress in the amount of $5 million. These funds will allow the Corps to begin acquisition of the reforestation easements and initiate the award of the pump supply contract.

The Draft Supplemental Environmental Impact Statement for the Big Sunflower River Maintenance Project will be released next year. This maintenance project will restore flood control capacities to 130 miles of channels by removing sediment that has built up over the past 40 years since the channels were originally improved. Our request for $5.591 million will allow right-of-way acquisition to continue and for the award of the first dredging contract. The residents in the Mississippi Delta continue to suffer damages from flooding while they wait for this maintenance project to reach their area.

Work on the Delta Headwaters Project has proven effective in reducing sediments to downstream channels. To discontinue this project will only diminish water quality by increasing sediment, reducing the level of protection to the citizens of the Delta and increasing required maintenance. We are requesting $25 million to continue this project.

The Upper Yazoo Project is critical to the Delta. The Corps of Engineers operates four major flood control reservoirs on the bluff hills overlooking the Mississippi Delta. These reservoirs hold back heavy spring rains and must have adequate outlet channel capacity to pass this excess runoff during the summer and fall months. Without completion of the Upper Yazoo Project, the Corps is forced to hold flood water from the previous spring, thereby reducing the ability to provide protection from the current year's flood water. We urge the Congress to provide $24.5 million allowing construction to continue and the award of additional channel enlargement items.

Maintenance of completed works can not be over looked. The four flood control reservoirs over looking the Delta have been in place for 50 years and have functioned as designed. Required maintenance must be performed to avoid any possibility of failure during a flood event. We are asking for $13.793 million for Arkabutla Lake, $12.69 million for Enid Lake, $13.231 million for Grenada Lake, and $14.483 million for Sardis Lake.

We are requesting $13.522 million for Maintenance of the Mainline Mississippi River Levees in the Lower Mississippi Valley Division which will provide for repair of levee slides, slope repair, and repair of the gravel maintenance roadway which is so vital to access during high water.

The Environmental Protection Agency (EPA) has been given too much power under section 404(c) of the Clean Water Act (CWA) which allows EPA to veto Congressionally authorized projects. During the early 1990s, due to abuse of the 404(c) power by EPA, Congress considered removing this authority from EPA. EPA has again invoked this veto power on the Yazoo Backwater Project. EPA is saying that you can't lower the water level with a flood control project! By killing this project with 404(c) veto authority, EPA is drawing a line in the sand over the future of flood control in our great Nation. EPA has vetoed the Yazoo Backwater Project even though it was approved, authorized and funded by Congress and exempt from a 404(c) veto by 404(r). It is now time to again take up this issue and remove the 404(c) veto power from EPA before they kill another flood control project that has been authorized by Congress.

As Members of the Congress representing the citizens of our Nation who live with the Mississippi River everyday, you clearly understand both the benefits provided by this resource, and the destructive force that must be controlled during a flood. On behalf of the Mississippi Levee Board, I can not express enough, our appreciation for your efforts in providing adequate funding over the last several years that has allowed construction to continue on our much needed projects and thank you in advance for your kind consideration of our requests for fiscal year 2010.

DEPARTMENT OF THE INTERIOR

BUREAU OF RECLAMATION

PREPARED STATEMENT OF DAVE FREUDENTHAL, GOVERNOR, STATE OF WYOMING

Dear Chairman Dorgan and Senator Bennett, I am requesting your support for an appropriation of $3,569,000 to the Bureau of Reclamation included in the President's fiscal year 2010 recommended budget in the Upper Colorado Region budget line item entitled "Endangered Species Recovery Implementation Program." This budget line-item designates $1,950,000 for construction and construction management activities for the San Juan River Basin Recovery Implementation Program; $1,219,000 for construction and construction management activities for the Upper Colorado River Endangered Fish Recovery Program; and $400,000 for Fish and Wildlife Management and Development activities to avoid jeopardy.

The Upper Colorado and San Juan recovery programs' objectives are to recover endangered fish species while water use and development proceeds in compliance with the Federal Endangered Species Act. Since 1988, these programs have provided ESA section 7 compliance (without litigation) for nearly 1,800 Federal, tribal, State and privately managed water projects depleting more than 3 million acre-feet of water per year. These highly successful, cooperative programs are ongoing partnerships among the States of New Mexico, Colorado, Utah and Wyoming, Indian tribes, Federal agencies and water, power and environmental interests. Substantial non-Federal cost-sharing funding exceeding 50 percent is embodied in both programs.

The Department of the Interior recognized these programs with the Department of the Interior's Cooperative Conservation Award in April 2008 as national model efforts demonstrating that collaborative conservation partnerships can successfully work to recover endangered species while addressing water needs to support growing western communities in a manner that fully respects State water law and interstate river compacts.

We request the subcommittee's assistance for fiscal year 2010 funding to ensure the Bureau of Reclamation's continuing financial participation, as authorized and directed by Public Law 106–392, as amended, in these two region-wide cooperative recovery programs. The State of Wyoming thanks you for the past support and assistance of your subcommittee; it has greatly facilitated the success of these multi-state, multi-agency programs.

PREPARED STATEMENT OF JON M. HUNTSMAN, JR., GOVERNOR, STATE OF UTAH

Dear Chairman Dorgan and Senator Cochran, this letter serves to respectfully request your support for an appropriation of $3,569,000 to the Bureau of Reclamation included in the President's fiscal year 2010 recommended budget in the Upper Colorado Region budget line item entitled "Endangered Species Recovery Implementation Program," This budget line-item designates $1,950,000 for construction and construction management activities for the San Juan River Basin Recovery Implementation Program; $1,219,000 for construction and construction management activities for the Upper Colorado River Endangered Fish Recovery Program; and $400,000 for Fish and Wildlife Management and Development activities to avoid jeopardy.

The Upper Colorado and San Juan recovery programs' objectives are to recover endangered fish species while water use and development proceeds in compliance with the Federal Endangered Species Act. Since 1988, these programs have provided ESA section 7 compliance (without litigation) for neatly 1,800 Federal, tribal, State and privately managed water projects depleting more than 3 million acre-feet of water per year. These highly successful, cooperative programs are ongoing partnerships among the States of New Mexico, Colorado, Utah and Wyoming, Indian tribes, Federal agencies and water, power, and environmental interests. Substantial non-Federal cost-sharing funding exceeding 50 percent is embodied in both programs.

The Department of the Interior recognized these programs with the DOI's Cooperative Conservation Award in April 2008 as national model efforts demonstrating that collaborative conservation partnerships can successfully work to recover endangered species while addressing water needs to support growing western communities in a manner that fully respects State water law and interstate river compacts.

Utah requests the subcommittee's assistance for fiscal year 2010 funding to ensure the Bureau of Reclamation's continuing financial participation as authorized and directed by Public Law 106–392, as amended, in these two region-wide cooperative recovery programs. On behalf of the State of Utah, I thank you for the past

support and assistance of your subcommittee; it has greatly facilitated the success of these multi-state, multi-agency programs.

PREPARED STATEMENT OF BILL RICHARDSON, GOVERNOR, STATE OF NEW MEXICO

Dear Chairman Dorgan and Senator Cochran, I am requesting. your support for an appropriation of $3,569,000 to the Bureau of Reclamation included in the President's fiscal year 2010 recommended budget in the Upper Colorado Region budget line item entitled "Endangered Species Recovery Implementation Program." This budget line-item designates $1,950,000 for construction and construction management activities for the San Juan River Basin Recovery Implementation Program; $1,219,000 for construction and construction management activities for the Upper Colorado River Endangered Fish Recovery Program: and $400,000 for Fish and Wildlife Management and Development activities to avoid jeopardy.

The requested fiscal year 2010 appropriation for to San Juan River Recovery Program will be used for construction of critically needed fish passage structures in critical habitat on the San Juan River as well as providing for program management and development.

The Upper Colorado and San Juan recovery programs' objectives are to recover endangered fish species while water use and development proceeds in compliance with the Federal Endangered Species Act. Since 1988, these programs have provided ESA section 7 compliance (without litigation) for nearly 1,800 Federal, tribal, State and privately managed water projects depleting more than 3 million acre-feet of water per year. These highly successful cooperative programs are ongoing partnerships among the States of New Mexico, Colorado, Utah and Wyoming, Indian tribes, Federal agencies and water, power and environmental interests. Substantial non-Federal cost-sharing funding exceeding 50 percent is embodied in both programs.

The Department of the Interior recognized these programs with the Department of the Interior's Cooperative Conservation Award in April 2008 as national model efforts demonstrating that collaborative conservation partnerships can successfully work to recover endangered species while addressing water needs to support growing western communities in a manner that fully respects State water law and interstate river compacts.

We request the subcommittee's assistance for fiscal year 2010 funding to ensure the Bureau of Reclamation's continuing financial participation, as authorized and directed by Public Law 106–392, as amended, in these two region wide cooperative recovery programs. The State of New Mexico thanks you for the past support and assistance of your subcommittee; it has greatly facilitated the success of these multi-state, multi-agency programs.

PREPARED STATEMENT OF BILL RITTER,. JR., GOVERNOR, STATE OF COLORADO

Dear Chairman Dorgan and Senator Bennett, I am requesting your support for an appropriation of $3,569,000 to the Bureau of Reclamation included in the President's fiscal year 2010 recommended budget in the Upper Colorado Region budget line item entitled "Endangered Species Recovery Implementation Program." This budget line-item designates $1,950,000 for construction and construction management activities for the San Juan River Basin Recovery Implementation Program; $1,219,000 for construction and construction management activities for the Upper Colorado River Endangered Fish Recovery Program; and $400,000 for Fish and Wildlife Management and Development activities to avoid jeopardy.

These programs are long-standing partnerships among the States of Colorado, New Mexico, Utah and Wyoming, Indian tribes, Federal agencies, and water, power and environmental interests. These programs are successful and collaborative efforts that merit continued support by the Federal Government as a model method to recover threatened and endangered species, while allowing water development to occur in a manner that complies with the Endangered Species Act.

The Department of the Interior recognized these programs with the Department of the Interior's Cooperative Conservation Award in April 2008 as national models demonstrating that collaborative conservation partnerships can successfully work to recover endangered species while addressing water needs to support growing western communities in a manner that fully respects State water law and interstate river compacts. Since 1988, these programs have provided ESA compliance (without litigation) for nearly 1,800 Federal, tribal, State and privately managed water projects depleting more than 3 million acre-feet of water per year. Substantial non-Federal cost-sharing funding exceeding 50 percent is embodied in both of these programs as authorized by Public Law 106–392, as amended.

The past support and assistance of your subcommittee has greatly facilitated the success of these multi-state, multi-agency programs. On behalf of the State of Colorado, I thank you for that support and I request the subcommittee's assistance, for fiscal year 2010 funding, to ensure the Bureau of Reclamation's continuing and vitally important financial participation in these regional cooperative recovery programs.

PREPARED STATEMENT OF THE WYOMING WATER ASSOCIATION (WWA)

Dear Chairman Dorgan and Senator Bennett, on behalf of the members of the Wyoming Water Association, I am requesting your support for an appropriation in the President's recommended budget for fiscal year 2010 of $3,569,000 to the Bureau of Reclamation within the budget line item entitled "Endangered Species Recovery Implementation Program" for the Upper Colorado Region. The funding designation I seek is as follows: $1,219,000 for construction activities for the Upper Colorado River Endangered Fish Recovery Program; $1,950,000 for construction activities for the San Juan River Basin Recovery Implementation Program; and $400,000 for Fish and Wildlife Management and Development activities to avoid jeopardy. This funding is authorized by Public Law 106–392, as amended, and is included in the President's recommended budget for fiscal year 2010 within the Bureau of Reclamation's "Endangered Species Recovery Implementation Program" budget line-item.

Founded in 1933, the Wyoming Water Association (WWA) is a Wyoming non-profit corporation and voluntary organization of private citizens, elected officials, and representatives of business, government agencies, industry and water user groups and districts. The Association's objective is to promote the development, conservation, and utilization of the water resources of Wyoming for the benefit of Wyoming people. The WWA provides the only statewide uniform voice representing all types of water users within the State of Wyoming and encourages citizen participation in decisions relating to multi-purpose water development, management and use.

The Wyoming Water Association is a participant in the Upper Colorado River Endangered Fish Recovery Program. That program, and its sister program within the San Juan River Basin, are ongoing partnerships among the States of Colorado, New Mexico, Utah and Wyoming, Indian tribes, Federal agencies and water, power and environmental interests. The programs' objectives are to recover endangered fish species while water use and development proceeds in compliance with the Federal Endangered Species Act. The Department of the Interior continues to recognize these programs as national models demonstrating that collaboratively partnerships can successfully work to recover endangered species while addressing water needs to support growing western communities in a manner that fully respects State water law and interstate compacts. Since 1988, these programs have provided ESA section 7 compliance (without litigation) for over 1,600 Federal, tribal, State and privately managed water projects depleting more than 3 million acre-feet of water per year.

The requested fiscal year 2010 appropriation will allow the San Juan River Recovery Implementation Program to complete a fish passage facility on the San Juan River and to initiate planning and design for a proposed similar structure in a following year. The funding for the Upper Colorado Recovery Program will be used for pre-construction efforts prior to the anticipated award of a contract in fiscal year 2011 to construct a fish screen to avoid entrapment and a water conservation and canal automation project to provide additional water supplies for the endangered fishes. Substantial non-Federal cost-sharing funding exceeding 50 percent is being provided for the capital construction projects benefiting the endangered fish and their habitats associated with both of these successful programs.

The past support and assistance of your subcommittee has greatly facilitated the success of these multi-state, multi-agency programs. On behalf of the members of the Wyoming Water Association, thank you for that support. We again request the subcommittee's assistance, with regard to fiscal year 2010 funding, to ensure the Bureau of Reclamation's continuing financial participation in these vitally important programs.

PREPARED STATEMENT OF THE SOUTHERN UTE INDIAN TRIBE

Dear Chairman Dorgan and Senator Bennett, on behalf of the Southern Ute Indian Tribe, I am requesting your support for an appropriation in the President's recommended budget for fiscal year 2010 of $3,569,000 to the Bureau of Reclamation ("Reclamation") within the budget line item entitled "Endangered Species Recovery

Implementation Program" for the Upper Colorado Region. The funding designation the Tribe seeks on behalf of Reclamation is as follows: $1,219,000 for construction activities for the Upper Colorado River Endangered Fish Recovery Program; $1,950,000 for construction activities for the San Juan River Basin Recovery Implementation Program; and $400,000 for Fish and Wildlife Management and Development activities to avoid jeopardy. This funding is authorized by Public Law 106–392, as amended.

These highly successful, cooperative programs are ongoing partnerships among the States of New Mexico, Colorado, Utah and Wyoming, the Southern Ute Indian Tribe, the Ute Mountain Ute Indian Tribe, the Navajo Nation, and the Jicarilla Apache Nation, Federal agencies and water, power and environmental interests. The programs' objectives are to recover endangered fish species while water use and development proceeds in compliance with the Endangered Species Act.

The tribe appreciates the subcommittee's past support and requests the subcommittee's assistance for fiscal year 2010 funding to ensure Reclamation's continuing financial participation in these vitally important programs.

PREPARED STATEMENT OF THE FORT PECK RESERVATION RURAL WATER SYSTEM (PUBLIC LAW 106–382), ASSINIBOINE AND SIOUX RURAL WATER SYSTEM, AND THE DRY PRAIRIE RURAL WATER SYSTEM

BUREAU OF RECLAMATION

Fiscal Year Budget Request

The Fort Peck Assiniboine and Sioux Tribes and Dry Prairie Rural Water respectfully request fiscal year 2010 appropriations of $44,649,000 for the Bureau of Reclamation rural water program. The project is 22 percent complete. It has progressed well subject to available funds.

Fiscal year 2010 funds will be used to construct critical elements of the Fort Peck Reservation Rural Water System, Montana, (Public Law 106–382, October 27, 2000). The amount requested is based on need to build Phase II of the regional water treatment plant, pipelines to connect with the Town of Poplar and Dry Prairie systems on the east and west sides project. The request is within capability to spend funds in fiscal year 2010 and is set out in Table 1. The Schedule of Activities and Cash Flow analysis to build the major features of the regional system (water treatment plant and common pipelines) is included as Attachment A and demonstrate capability to use funds.

TABLE 1.—FISCAL YEAR 2010 FUNDING REQUEST FORT PECK RESERVATION RURAL WATER SYSTEM (PUBLIC LAW 106–382)

Project Feature	Federal	Non-Federal	Total
Fort Peck Tribes			
Water Treatment Plant:			
Phase I, Clear Well Wash Water Recovery	.....	.....	.....
Phase II, Main Treatment	$20,317,000	.....	$20,317,000
Pipelines:			
Water Treatment Plant to Poplar	10,763,000	.....	10,763,000
Water Treatment Plant to Wolf Point	.....	.....	.....
FP OM Buildings	558,000	.....	558,000
Subtotal	31,638,000	.....	31,638,000
Dry Prairie			
Big Muddy to Plentywood	4,739,000	$1,496,000	6,235,000
Fort Kipp	219,000	69,000	288,000
Porcupine Creek to Opheim:			
St. Marie to Nashua	4,619,000	1,458,000	6,077,000
St. Marie to Opheim	3,434,000	1,084,000	4,518,000
Subtotal	13,011,000	4,107,000	17,118,000
Total	44,649,000	4,107,000	48,756,000

Funding Status and Needs

As shown in Table 2 below, the project will be 22 percent complete at the end of fiscal year 2009. Construction funds remaining to be spent after fiscal year 2009 will total $225.061 million within the current authorization (in October 2008 dollars). Administrative costs of extending the project completion to fiscal year 2015 and construction costs outside the authorized ceiling increase remaining costs to $245.969 million before considering inflation. Inflation at 7.5 percent over the next 6 years, the average rate over the last 5 years in Reclamation construction projects, is expected to increase remaining project costs to $314.001 million if the project is completed in fiscal year 2015. An average $52.33 million annually is required to complete the project by 2015 considering all factors. The project is seeking an amendment of Public Law 106–382 in this session of Congress to extend the project completion to December 31, 2015.

TABLE 2.—FUNDING STATUS AND NEEDS

Total Federal Funding Authority (October 2008 $)	$289,110,000
Federal Funds Expended Through Fiscal Year 2009	$64,049,000
Percent Complete	22.15
Amount Remaining After Fiscal Year 2009:	
Total Authorized (October 2008 $)	$225,061,000
Overhead Adjustment for Extension to Fiscal Year 2015 and Other	$245,969,000
Adjusted for Inflation to Fiscal Year 2015 at 7.46 Percent Annually	$314,001,000
Years to Complete	6
Average Annual Required to End in Fiscal Year 2015 (Need Extension of Public Law 106–382)	$52,333,000
Fiscal Year 2010 Amount Requested	$44,649,000

The request ($44.649 million) is less than the average annual appropriations needed to complete the project in fiscal year 2015 ($52.333 million annually), and is within the capability of the project to use funds for construction. The request will create an estimated 350 full-time equivalent (FTE) construction jobs in an area of Montana with low per capita income and high unemployment.

Cost indexing from fiscal year 1998 reflecting inflation increased the cost of the project from $176 million to $289 million, an increase of $113 million. (See Attachment D). Increases in the level of appropriations are needed to outpace inflation, which averaged 3.35 percent for pipelines in the first 5 years of the project, 7.46 percent over the last 5 years and 13.80 percent last year.

Funding Has Not Been Adequate to Serve Any Tribal Users

The sponsor tribes and Dry Prairie greatly appreciate the previous appropriations from the subcommittee that have permitted building the Missouri River intake (the water source), stages of the water treatment plant in multiple contracts, the Culbertson to Medicine Lake pipeline and branches serving rural users outside the Fort Peck Indian Reservation. However, funds have not been adequate to complete the water treatment plant, pipeline to Poplar and other features as proposed for fiscal year 2010. Service to tribal users and communities within the Fort Peck Indian Reservation is dependent upon completion of those facilities and has not been possible. No water has been delivered on the Fort Peck Indian Reservation.

Proposed Activities

Public Law 106–382 (October 27, 2000) authorized the project, which includes all of the Fort Peck Indian Reservation in Montana and the Dry Prairie portion of the project outside the Reservation in Roosevelt, Sheridan, Daniels and part of Valley County.

Fort Peck Indian Reservation

On the Fort Peck Indian Reservation the tribes have used appropriations from previous years to:

—Construct the Missouri River raw water intake, a critical feature of the regional water project. The raw water pump station has been constructed, and the raw water pipeline between the Missouri River and the water treatment plant has been constructed to within 2 miles of the water treatment plant.

—The sludge lagoons at the water treatment plant have been completed.

—Phase I of the regional water treatment plant is under construction and will be completed in fiscal year 2009 with funds appropriated previously.

The regional water treatment plant was divided into three construction phases over the past several years. This segregation of the project in smaller contracts increased the cost of the project significantly but was necessary due to inadequate

funding to bid the project as a single unit, which would normally be the case. Rather than one contractor, there will ultimately be three contractors. Three sets of plans and specifications were required to coordinate new construction contracts with pieces already built. The Bureau of Reclamation approved the plans and specifications for the entire plant 4 years ago. Capability to use funds has not been an issue.

The remaining phase of the water treatment plant has been advertised for construction in contemplation of adequate funding in fiscal year 2010 ($20.317 million) to complete this essential component of the project. The bid opening is scheduled for April 7, 2009. American Recovery and Reinvestment Act (ARRA) of 2009 funds would offset the requirement for fiscal year 2010 appropriations. The project clearly meets the expectation of Congress for ARRA, but at the time of this writing, the availability of ARRA funds was not known.

The request for fiscal year 2010 includes funds for construction of the essential pipelines from the water treatment plant to the community of Poplar (but not to Wolf Point). The pipeline to Poplar is a regional transmission pipeline east of the water treatment plant to serve the Fort Peck Indian Reservation and to eventually connect to Dry Prairie facilities east of the Reservation. The tribes will have capability to build the pipeline to Wolf Point in fiscal year 2010, which is a regional transmission pipeline west of the water treatment and serves the west sides of the Fort Peck Indian Reservation and Dry Prairie.

The pipeline project from the water treatment plant to Poplar will provide a water supply from the Missouri River to replace groundwater contaminated by "brine" from oil drilling operations. The brine contamination is the subject of EPA orders against the responsible oil company. The replacement supplies will serve the community of Poplar and the surrounding rural area where wells have been contaminated. More wells are threatened. There is urgency in completing the regional project to Poplar before the advancing plume of contamination reaches existing community wells. Projections of the date that contamination will reach the Poplar community wells range from imminent danger to as much as a decade, but the anxiety of the tribes' leadership and membership cannot be overcome without completing the water treatment plant and connecting the regional pipeline to Poplar in fiscal year 2010. This is a critical timeframe for the tribes. The staff and members of the subcommittee are urged to review this matter with the tribes and Bureau of Reclamation to clarify the urgency of completing necessary project facilities and alleviating the threat of contamination of the public water supply for the tribes' headquarters community of Poplar. (See Attachment E).

The Bureau of Reclamation can confirm that the use of funds proposed for fiscal year 2010 is within the project's capability to spend (see Attachment A).

Dry Prairie

Dry Prairie has used previous appropriations to construct over 200 miles of distribution pipelines from the community of Culbertson, an interim water source to be replaced when the regional water treatment plant and transmission pipeline have been completed on the Fort Peck Indian Reservation. The distribution system serves the communities of Froid and Medicine Lake and over 200 rural homes, farms and ranches. Pipelines were sized to serve the area north of the Missouri River, south of the Canadian border and between the Fort Peck Indian Reservation and the North Dakota border (see general location map, Attachment B) as funds are made available and water sources are expanded.

The request for fiscal year 2010 funds of $13.011 million, supplemented by a non-Federal cost share of $4.107 million, will be used to complete pipelines starting in fiscal year 2009 to rural services on the west side of the Dry Prairie project between the communities of St. Marie and Nashua. An existing water treatment plant owned by the Boeing Co. at the former Glasgow Air Force Base will provide an interim water supply to serve the west side project until the regional water treatment plant of the tribes is complete and pipelines from Wolf Point to Nashua are constructed. The facilities constructed on the west side of the project are the same facilities required after connection of the regional water treatment plant. Therefore, no duplication of facilities are associated with the interim project.

Dry Prairie will also assist the Assiniboine and Sioux Tribes in building pipelines from Culbertson on the east side of the project to the Reservation boundary to serve the tribal community of Fort Kipp with an interim water supply. The tribes are building facilities within the Reservation with fiscal year 2009 funding.

Dry Prairie proposes to extend interim water supply capability between Culbertson and Plentywood with fiscal year 2010 funding. These facilities will be served from the tribes' regional water treatment plant when the plant and interconnecting main transmission pipelines are completed to Culbertson.

Master Plan

The project master plan is provided for review as Attachment C. The request for fiscal year 2010 is shown in relation to the project components that remain to be completed after fiscal year 2009.

Administration's Support

The project has reached 22 percent completion over a period of 9 years and needs greater funding support to complete the project in 2015. The administration's budget included the project in fiscal year 2007 at the $5.0 million level but has not supported funds for the project since that time. The previous administration's support for the rural water program has diminished to include the Mni Wiconi and Garrison projects only. Congressional support is needed for the broader program of projects under construction.

The tribes and Dry Prairie have worked extremely well and closely with the Bureau of Reclamation since the authorization of the project in fiscal year 2000. The Bureau of Reclamation has participated, reviewed and commented on the Final Engineering Report, and all comments were incorporated into the report. Agreement was reached on final presentation. OMB reviewed the Final Engineering Report prior to its submission to Congress in the final step of the approval process. The Commissioner, Regional and Area Offices of the Bureau of Reclamation have been consistently in full agreement with the need, scope, total costs, and the ability to pay analysis that supported the Federal and non-Federal cost shares. There have been no areas of disagreement or controversy in the formulation or implementation of the project.

The Bureau of Reclamation collaborated with the tribes and Dry Prairie to conduct and complete value engineering investigations of the Final Engineering Report (planning), the Culbertson to Medicine Lake pipeline (design), the Poplar to Big Muddy River pipeline (design), the Missouri River intake (design) and the Regional Water Treatment plant (design). Each of these considerable efforts has been directed at ways to save construction and future operation, maintenance and replacement costs as planning and design proceed. Agreement with Reclamation has been reached in all value engineering sessions on steps to save Federal and non-Federal costs in the project.

The Bureau of Reclamation conducted independent review of the final plans and specifications for the Missouri River raw water intake, the regional water treatment plant and the Culbertson to Medicine Lake Project. The Agency participated heavily during the construction phases of those projects and concurred in all aspects of construction from bidding through the completion of construction. The regional water treatment plant is under construction, and the Bureau of Reclamation is providing sound oversight.

Cooperative agreements have been developed and executed between the Bureau of Reclamation and the tribes and between Bureau of Reclamation and Dry Prairie. Those cooperative agreements carefully set out goals, standards and responsibilities of the parties for planning, design and construction. All plans and specifications are subject to levels of review by the Bureau of Reclamation pursuant to the cooperative agreements. The sponsors collaborate to undertake activities that assure proper oversight and approval by the Bureau of Reclamation. Each year the tribes and Dry Prairie, in accordance with the cooperative agreements, develop a work plan setting out the planning, design and construction activities and the allocation of funding to be utilized on each project feature.

Clearly, the Fort Peck Reservation Rural Water System is well supported by the Bureau of Reclamation. Congress authorized the project with a plan formulated in full cooperation and collaboration with the Bureau of Reclamation, and major project features are under construction with oversight by the Agency.

SUPPLEMENTAL BACKGROUND

Local Project Support

The Fort Peck Tribes have supported the project since 1992 when they conceived it and sought means of improving the quality of life in the region. The planning was a logical step after successful completion of an historic water rights compact with the State of Montana. This compact was the national "ice breaker" that increased the level of confidence by other tribes in Indian water right settlement initiatives. The tribes did not seek financial compensation for the settlement of their water rights but sought development of meaningful water projects as now authorized.

The 1999 Montana Legislature approved a funding mechanism from its Treasure State Endowment Program to finance the non-Federal share of project planning and construction. Demonstrating support of Montana for the project, there were only

three votes against the statutory funding mechanism in both the full House and Senate. The 2001 through 2007 Montana Legislatures have provided all authorizations and appropriations necessary for the non-Federal cost share. (The 2009 legislature is in session and is expected to continue strong project support).

Dry Prairie support is demonstrated by a financial commitment of all 14 communities within the service area to participate in the project. Rural support is strong, with about 70 percent of area farms and ranches intending to participate as evidenced by their intent fees of $100 per household.

Need for Water Quality Improvement

The Fort Peck Indian Reservation was previously designated as an "Enterprise Community", underscoring the level of poverty and need for economic development in the region. The success of economic development within the Reservation will be significantly enhanced by the availability of higher quality, safe and more ample municipal, rural and industrial water supplies that this regional project will bring to the Reservation, made more necessary by persistent drought in the region. Outside the Fort Peck Indian Reservation, the Dry Prairie area has income levels that are higher than within the Reservation but lower than the State average.

The feature of this project that makes it more cost effective than similar projects is its proximity to the Missouri River. The southern boundary of the Fort Peck Indian Reservation is formed by the Missouri River for a distance of more than 60 miles. Many of the towns in this regional project are located 2 to 3 miles from the river, including Nashua, Frazer, Oswego, Wolf Point, Poplar, Brockton, Culbertson, and Bainville. As shown on the enclosed project map, a transmission system outside the Fort Peck Indian Reservation will deliver water 30 to 40 miles north of the Missouri River. Therefore, the distances from the Missouri River to all points in the main transmission system are shorter than in other projects of this nature in Reclamation's Great Plains Region.

ATTACHMENT A

SCHEDULE OF ACTIVITIES AND CASH FLOW - NO STIMULUS

$1,000, OCTOBER 2008 $

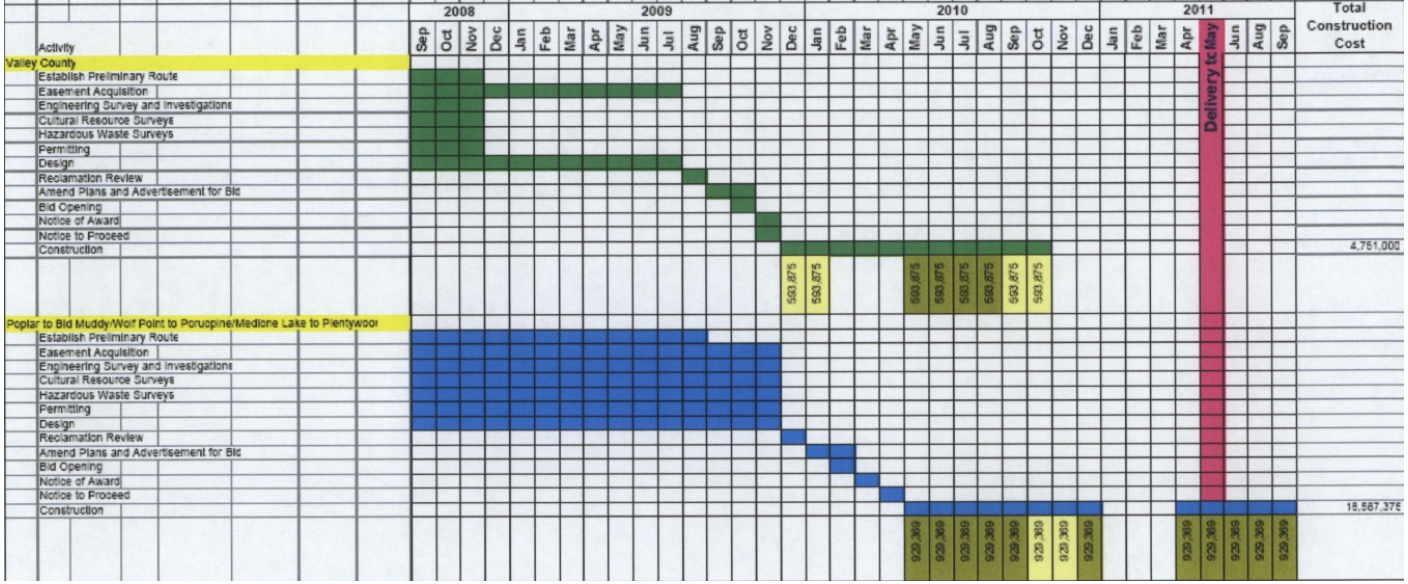
Activity	2008 Sep	Oct	Nov	Dec	2009 Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	2010 Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	2011 Jan	Feb	Mar	Apr	May	Jun	Aug	Sep	Total Construction Cost
Fort Kipp																																					
Easement Acquisition																																					
Cultural Resource Surveys																																					
Hazardous Waste Surveys																																					
Permitting																																					
Design																																					
Reclamation Review																																					
Amend Plans and Advertisement for Bid																																					
Bid Opening																																					
Notice of Award																																					
Notice to Proceed																																					
Construction																																					1,112,000
									222,400	222,400	222,400	222,400	222,400																								
WTP																																					
Wash Water Recovery Basin, Clear Well and Site Work (Contracted)																																					
Advertise for Bid/Agreement																																					
Bid Opening																																					
Notice of Award																																					
Notice to Proceed																																					
Construction																																					15,151,000
Main Treatment (P&S Approved by USBR)																																					
Re-Bid for Construction																																					
Advertise for Bid/Agreement																																					
Bid Opening																																					
Notice of Award																																					
Notice to Proceed																																					
Construction																																					27,000,000
									1,125,000	1,125,000	1,125,000	1,125,000	1,125,000	1,125,000	1,125,000	1,125,000	1,125,000	1,125,000	1,125,000	1,125,000	1,125,000	1,125,000	1,125,000	1,125,000	1,125,000	1,125,000	1,125,000	1,125,000	1,125,000	1,125,000	1,125,000	1,125,000	1,125,000	1,125,000	1,125,000	1,125,000	
WTP to Poplar/Wolf Point Pipeline and Intake Extensor																																					
Establish Preliminary Route																																					
Permission to Survey																																					
Easement Acquisition																																					
Environmental Study and Investigations																																					
Cultural Resource Surveys																																					
Hazardous Waste Surveys																																					
Permitting																																					
Design																																					
Reclamation Review																																					
Amend Plans and Advertisement for Bid																																					
Bid Opening																																					
Notice of Award																																					
Notice to Proceed																																					
Construction																																					17,000,000

Poplar and Wolf Point

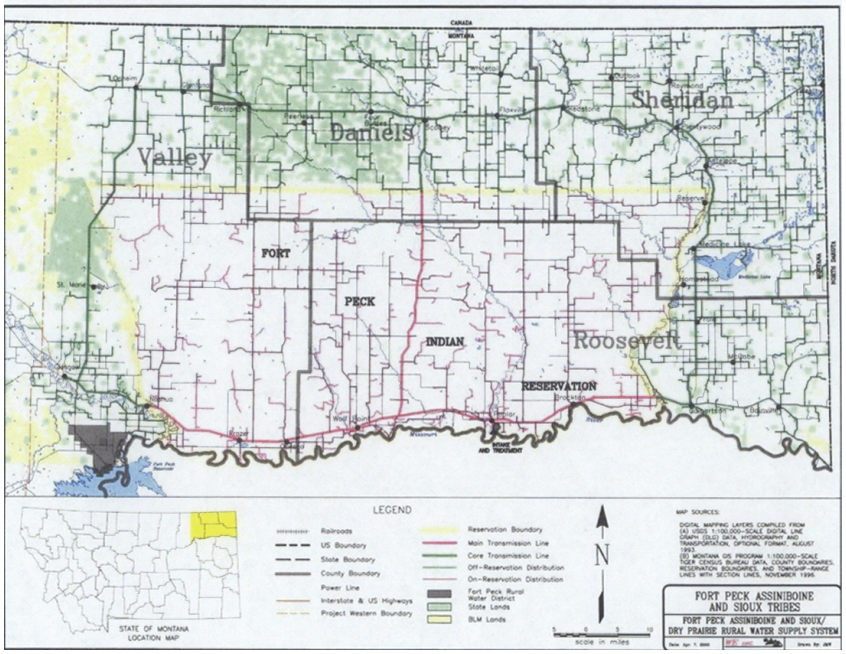
ATTACHMENT A

SCHEDULE OF ACTIVITIES AND CASH FLOW - NO STIMULUS

$1,000, OCTOBER 2008 $



ATTACHMENT B
LOCATION MAP



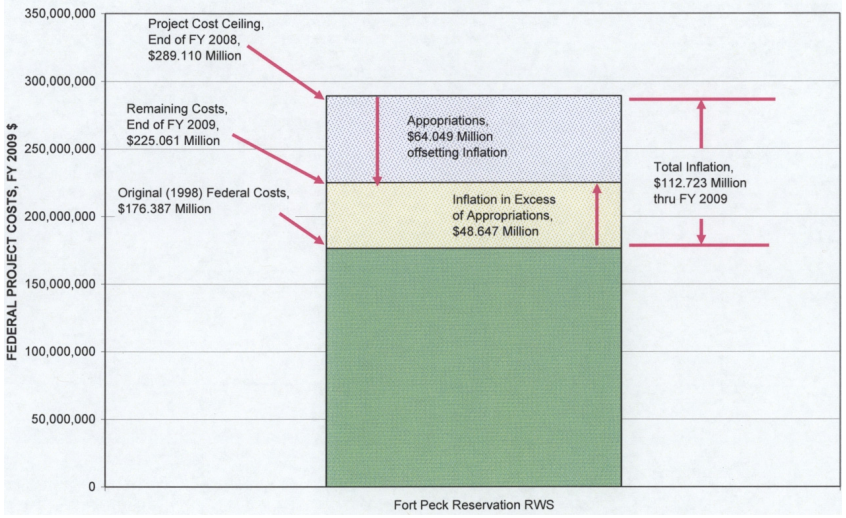
ATTACHMENT C

ASSINIBOINE SIOUX AND DRY PRAIRIE RWS
MASTER PLAN, OCTOBER 2008 $

	Authorized Funds				FY 2008 Work Plan				Future Use of Funds by Construction Year					
Segment	Original Cost (Oct 1998 $)	Indexed Cost (Oct 2008 $)	Fort Peck Contract Cost	Dry Prairie Contract Cost	Spent thru 9/30/2008	FY 2008 Carryover	Use of FY2009 Funds	Balance To Complete	6 2,010	7 2,011	8 2,012	9 2,013	10 2,014	Total
Missouri River Raw Water Intake	2,880,000	3,164,000	4,047,000		4,047,000	0	0	0						4,047,000
Intake Extension			2,000,000					2,000,000		2,000,000				2,000,000
Treatment Plant														
Sludge Lagoons	2,600,000	3,275,000	2,600,000		2,600,000	0	0	0						2,600,000
Water Treatment Plant														
Phase I	8,000,000	10,456,000	15,151,000		6,358,000	8,793,000	0	0	0					15,151,000
Phase II	6,134,000	8,610,000	27,500,000		0	6,513,000	3,998,000	16,989,000	16,989,000					27,500,000
Poplar to Big Muddy	22,681,000	41,651,000												
Poplar to Big Muddy			45,603,000		0	0	0	45,603,000		8,000,000	10,000,000	16,000,000	11,603,000	45,603,000
Fort Kipp			873,000		0	0	873,000	0						873,000
Highway 13 to FP Boundary	9,247,000	16,981,000	0		0	0		0					0	0
Poplar to Porcupine Creek	40,190,000	73,803,000												
WTP to Poplar			11,000,000		0	0	0	11,000,000	9,000,000	2,000,000				11,000,000
WTP to Wolf Point			4,000,000		0	0	0	4,000,000		4,000,000				4,000,000
Wolf Point to Porcupine Creek			66,074,000		0	0	0	66,074,000		8,000,000	20,000,000	16,000,000	22,074,000	66,074,000
FP OM Buildings	1,000,000	1,173,000	1,173,000		0	706,000	0	467,000	467,000				0	1,173,000
FP Electrical, Meters, Easements	4,164,000	5,730,000	5,730,000		0	0		5,730,000				819,000	4,911,000	5,730,000
Subtotal	96,896,000	164,843,000	185,751,000		13,005,000	16,012,000	4,871,000	151,863,000	26,456,000	24,000,000	30,000,000	32,819,000	38,588,000	185,751,000
Planning, Design, Admin														
Reclamation Oversight	3,913,000	5,576,000	5,576,000		1,032,000	0	213,000	4,331,000	866,000	866,000	866,000	866,000	867,000	5,576,000
Environmental Mitigation	489,000	712,000	712,000		0	0	0	712,000	142,000	142,000	142,000	142,000	144,000	712,000
Administration	6,744,000	9,336,000	9,336,000		4,536,000	0	902,000	3,898,000	780,000	780,000	780,000	780,000	778,000	9,336,000
Easement Acquisition	2,621,000	3,817,000	3,817,000		0	0	0	3,817,000	763,000	763,000	763,000	763,000	765,000	3,817,000
Design	7,582,000	10,767,000	10,767,000		2,004,000	736,000	0	8,027,000	1,605,000	1,605,000	1,605,000	1,605,000	1,607,000	10,767,000
Inspection	6,847,000	9,711,000	9,711,000		3,478,000	0	1,100,000	5,133,000	1,027,000	1,027,000	1,027,000	1,027,000	1,025,000	9,711,000
Subtotal	28,196,000	39,919,000	39,919,000		11,050,000	736,000	2,215,000	25,918,000	5,183,000	5,183,000	5,183,000	5,183,000	5,186,000	39,919,000
Total	125,092,000	204,762,000	225,670,000		24,055,000	16,748,000	7,086,000	177,781,000	31,639,000	29,183,000	35,183,000	38,002,000	43,774,000	225,670,000
Big Muddy to Plentywood														
Culbertson to Medicine Lak	4,360,000	5,301,000		4,360,000	4,360,000	0	0	0						4,360,000
A-Branches and Meters	6,534,000	10,371,000		6,534,000	6,534,000	0	0	0						6,534,000
Remaining	8,539,000	15,681,000		20,857,000	0	0	158,000	20,699,000	5,174,750	5,174,750	5,174,750	5,174,750		20,857,000
Fort Kipp				239,000	0	0	0	239,000	239,000					239,000
FP Boundary to Scobey	4,025,000	7,391,000		14,540,000	0	0	0	14,540,000			7,000,000	5,550,000	1,990,000	14,540,000
Scobey to Plentywood	9,838,000	18,066,000		11,098,000	0	0	0	11,098,000				3,000,000	8,098,000	11,098,000
Scobey to Opheim	7,945,000	14,590,000		0	0	0	0	0						0
Porcupine Creek to Opheim	7,380,000	12,940,000			0	0	0	0						
St. Marie to Nashua		0		14,839,000	0	3,674,000	1,077,000	10,088,000	5,044,000	5,044,000	0			14,839,000
St. Marie to Opheim		0		16,680,000	0	0	0	16,680,000	3,750,000	2,650,000	3,950,000	3,950,000	2,380,000	16,680,000
DP OM Buildings	1,000,000	1,375,000		1,375,000	0	0	0	1,375,000					1,375,000	1,375,000
DP Electrical, Meters, Easements	3,021,000	4,146,000		4,146,000	0	0	239,000	3,907,000					3,907,000	4,146,000
	52,642,000	89,861,000	0	94,668,000	10,894,000	3,674,000	1,474,000	78,626,000	14,207,750	12,868,750	16,124,750	17,674,750	17,750,000	94,668,000
Planning, Design, Admin														
Reclamation Oversight	2,108,000	3,011,000		3,011,000	555,000	0	87,000	2,369,000	474,000	474,000	474,000	474,000	473,000	3,011,000
Environmental Mitigation	264,000	372,000		372,000	145,000	0	25,000	202,000	40,000	40,000	40,000	40,000	42,000	372,000
Administration	3,947,000	5,524,000		5,524,000	2,049,000	0	671,000	2,804,000	561,000	561,000	561,000	561,000	560,000	5,524,000
Easement Acquisition	759,000	1,095,000		1,095,000	88,000	0	0	1,007,000	201,000	201,000	201,000	201,000	203,000	1,095,000
Design	4,085,000	5,806,000		5,806,000	1,610,000	0	386,000	3,810,000	762,000	762,000	762,000	762,000	762,000	5,806,000
Inspection	3,689,000	5,315,000		5,315,000	745,000	0	205,000	4,365,000	873,000	873,000	873,000	873,000	873,000	5,315,000
Subtotal	14,852,000	21,123,000	0	21,123,000	5,192,000	0	1,374,000	14,557,000	2,911,000	2,911,000	2,911,000	2,911,000	2,913,000	21,123,000
Total	67,494,000	110,984,000	0	115,791,000	16,086,000	3,674,000	2,848,000	93,183,000	17,118,750	15,779,750	19,035,750	20,585,750	20,663,000	115,791,000
Tribes (All Federal)	125,092,000	204,762,000	225,670,000		24,055,000	16,748,000	7,086,000	177,781,000	31,639,000	29,183,000	35,183,000	38,002,000	43,774,000	225,670,000
Dry Prairie	67,494,000	110,984,000		115,791,000	16,086,000	3,674,000	2,848,000	88,376,000	17,118,750	15,779,750	19,035,750	20,585,750	15,856,000	110,984,000
Federal	51,295,000	84,348,000		84,348,000	12,225,000	3,674,000	2,914,000	65,535,000	13,010,000	11,993,000	14,467,000	15,645,000	10,420,000	84,348,000
Non-Federal	16,199,000	26,636,000		26,636,000	3,861,000	0	(66,000)	22,841,000	4,108,750	3,786,750	4,568,750	4,940,750	5,436,000	26,636,000
Total Project	192,586,000	315,746,000	225,670,000	115,791,000	40,141,000	20,422,000	9,934,000	266,157,000	48,757,750	44,962,750	54,218,750	58,587,750	59,630,000	336,654,000
Federal	176,387,000	289,110,000	225,670,000	84,348,000	36,280,000	20,422,000	10,000,000	243,316,000	44,649,000	41,176,000	49,650,000	53,647,000	54,194,000	310,018,000

ATTACHMENT D

INFLATION OUTPACES APPROPRIATIONS THRU FY 2009



PREPARED STATEMENT OF THE NATIONAL FISH AND WILDLIFE FOUNDATION

Mr. Chairman and members of the subcommittee, thank you for the opportunity to submit testimony regarding fiscal year 2010 Department of the Interior Appropriations and funding for the National Fish and Wildlife Foundation (Foundation). We respectfully request your approval of $5 million through the Bureau of Reclamation's Water and Related Resources fiscal year 2010 appropriation. This funding request for fiscal year 2010 is within the authorized level for the Foundation and would allow us to expand our historical partnership with the Bureau of Reclamation.

In 2009, the Foundation is celebrating its 25th Anniversary and a remarkable history of bringing private partners together to leverage Federal funds to conserve fish, wildlife, plants and their habitats. The Foundation is required by law to match each federally-appropriated dollar with a minimum of one non-Federal dollar. We consistently exceed this requirement by leveraging Federal funds at a 3:1 ratio while providing thought leadership and emphasizing accountability, measurable results, and sustainable conservation outcomes. Funds appropriated by this subcommittee are fully dedicated to project grants and do not cover any overhead expenses of the Foundation.

As of fiscal year 2008, the Foundation had awarded over 10,000 grants to more than 3,500 national and community-based organizations through successful partnerships with the Department of the Interior agencies, including the Bureau of Reclamation (BOR), U.S. Fish and Wildlife Service (FWS), Bureau of Land Management (BLM). In addition, our collaborative inter-agency model has grown to include partnerships with the Environmental Protection Agency, National Oceanic and Atmospheric Administration, USDA Forest Service, USDA Natural Resources Conservation Service, and several other Federal agencies. This effective model brings together multiple Federal agencies with local government and private organizations to implement conservation strategies that directly benefit diverse habitats and a wide range of fish and wildlife species.

HISTORY OF BOR PARTNERSHIP

BOR has been an important funding partner with the Foundation since 1996. This subcommittee provided direct BOR appropriations to the Foundation during fiscal year 1996-fiscal year 2003 and we also have a long history of working with BOR through discretionary cooperative agreements. Some examples of our successful partnership include:

—*Pacific Grassroots Salmonid Initiative*.—BOR was a partner with the Foundation and NOAA to restore native fish habitat in California, Oregon, and Alaska. Community-based grants support projects for in-stream habitat restoration, fish passage improvements, and barrier removals to benefit salmonids.

—*Bring Back the Natives Program*.—BOR participated in a national grant program to restore aquatic species back to historic habitats with the Foundation, U.S. Fish and Wildlife Service, Forest Service and Bureau of Land Management. Bring Back the Natives has already benefited more than 120 species, including 29 listed species such as salmon, desert pupfish, modoc suckers, tui and borax chubs and toiyabe spotted frog.

—*Lower Colorado River Multi-Species Conservation Program*.—The Foundation previously partnered with BOR as part of this program to administer funds and coordination of on-the-ground conservation activities. As part of the program, the Foundation successfully acquired 1,400 acres of Southwestern Willow Flycatcher riparian habitat in New Mexico and Arizona.

—*Williamson River Delta*.—BOR is currently a partner in the Foundation's efforts in the Williamson River Delta of Upper Klamath Lake to protect, restore and maintain shoreline wetlands critically important for the ESA-listed short-nosed and Lost River suckers and to support monitoring efforts for fish passage in the basin.

FISCAL YEAR 2010 OPPORTUNITIES

Fiscal year 2010 appropriations through BOR would allow the Foundation to build more robust programs for our ongoing efforts and forge new and innovative partnerships with BOR that will be required to further develop water transaction programs to increase in-stream flows for fish, removing fish passage barriers, and improving water quality in reservoirs. These strategies are essential to the recovery of many important fish species and provide important recreational opportunities for the public.

It is widely known that climate change will endanger some fish and wildlife populations and ecosystems more than others. In fiscal year 2008, the Foundation initiated grant-making through new keystone initiatives, which focus on conservation and measurable impact on select species of birds, fish and sensitive habitats. With BOR and other agency funding in fiscal year 2010, we will accelerate implementation of these strategic initiatives, many of which seek to address the affects of climate change through wildlife and natural resource adaptation. To ensure success in these investments, we are incorporating monitoring and evaluation into the entire lifecycle of our strategic initiatives in order to identify the highest priority areas that will be resilient to climate change to assure long-term conservation effectiveness, measure progress, promote adaptive management, demonstrate results, and continuously learn from our grant-making.

With our partners, the Foundation has identified several species and ecosystems in need of immediate conservation action. In partnership with BOR, fiscal year 2010 funds will focus on restoration of in-stream flows, imperiled species recovery, and reservoir management.

—*Restoration of In-Stream Flows*.—We recognize that climate change will greatly exacerbate two existing water supply problems which impact wildlife and the public—too little water during critical fish migration periods and the seasonality of freshwater supplies. The Foundation has successfully implemented a water transactions program in the Columbia Basin in partnership with the Bonneville Power Administration, local water trusts, agencies and willing landowners. Building on this success, the Foundation is working proactively with Federal, State and local partners to expand voluntary water transaction programs to benefit a diversity of wildlife species while improving water flows year-round for human use. BOR funding in fiscal year 2010 would support voluntary water transaction programs in the Klamath Basin of Oregon and California to add water storage capability in the watershed and increase available flows to meet both fish and irrigation needs. In central California, fiscal year 2010 funds would also support in-stream flow restoration along the Upper Sacramento River and water storage and increased flows in the Sierra Nevada alpine wetlands, or wet meadows.

—*Imperiled Species Recovery*.—Fiscal year 2010 funding would benefit the recovery of multiple fish species in the key watersheds. For example, wetland and stream habitat restoration on working landscapes in the Upper Klamath Basin, Oregon, will benefit two ESA-listed sucker species and native redband trout. In the Lower Klamath Basin of northern California, habitat restoration, fish passage improvement and a new water transactions program would restore flows

for Coho salmon, Chinook salmon and steelhead trout. In the Upper Colorado River Basin, our efforts will focus on the warmwater-coldwater interface to improve habitat for Colorado Cutthroat trout, native suckers and chubs on both public and private lands.

—*Reservoir Management*.—Fiscal year 2010 funding would support implementation of a Colorado River native fishes habitat restoration program near BOR reservoirs. Working with BOR and the U.S. Fish and Wildlife Service, one or two high priority reservoirs will be targeted to serve as demonstration projects for how reservoir habitat restoration can lead to improved lake health, increased wildlife-related recreation opportunities and strengthened local economies. In many reservoirs across the west, fish habitat has significantly diminished since construction of the reservoirs. This is due to loss of habitat structure within the reservoir as well as reduced water quality upstream of the reservoir. The Foundation will work with BOR and other partners to improve upstream habitat and water quality for native fish while also improving habitat conditions within the reservoir.

With a fiscal year 2010 BOR appropriation, the Foundation would engage non-Federal donors to support these strategic conservation initiatives through corporate contributions, legal settlements, and direct gifts. As a neutral convener, the Foundation is in a unique position to work with the Federal agencies, State and local government, corporations, foundations, conservation organizations and others to build strategic partnerships to address the most significant threats to fish and wildlife populations and their habitats. Currently, the Foundation has active partnerships with more than 30 corporations and foundations and 17 Federal agencies.

Efficiency, Performance Measures and Accountability

In the last couple of years, the Foundation has taken important strides to strengthen our performance measures and accountability. For example, the Foundation is working with scientists and other experts to develop species-specific metrics for each of our keystone initiatives that we will use to measure our progress in achieving our conservation outcomes. Our grant review and contracting processes have been improved to ensure we maximize efficiency while maintaining strict financial and evaluation-based requirements. We have enhanced our Web site with interactive tools such as webinars and a grants library to enhance the transparency of our grant-making, and instituted a new paperless application and grant administration system. In 2009, we will continue our efforts improve communication between and among our stakeholders and streamlining of our grant-making process.

The Foundation's grant-making involves a thorough internal and external review process. Peer reviews involve Federal and State agencies, affected industry, nonprofit organizations, and academics. Grants are also reviewed by the Foundation's issue experts, as well as evaluation staff, before being recommended to the Board of Directors for approval. In addition, according to our Congressional Charter, the Foundation provides a 30-day notification to the Members of Congress for the congressional district and State in which a grant will be funded, prior to making a funding decision.

Once again, Mr. Chairman, we greatly appreciate your continued support and hope the subcommittee will approve funding for the Foundation in fiscal year 2010.

PREPARED STATEMENT OF THE NORTHERN COLORADO WATER CONSERVANCY DISTRICT

Dear Chairman Dorgan and Senator Bennett, on behalf of the Northern Colorado Water Conservancy District, I am requesting your support for an appropriation in the President's recommended budget for fiscal year 2010 of $3,569,000 to the Bureau of Reclamation within the budget line item entitled "Endangered Species Recovery Implementation Program" for the Upper Colorado Region. The funding designation we seek is as follows: $1,219,000 for construction activities for the Upper Colorado River Endangered Fish Recovery Program; $1,950,000 for construction activities for the San Juan River Basin Recovery Implementation Program; and $400,000 for Fish and Wildlife Management and Development activities to avoid jeopardy. This funding is authorized by Public Law 106–392, as amended.

These highly successful, cooperative programs are ongoing partnerships among the States of New Mexico, Colorado, Utah and Wyoming, Indian tribes, Federal agencies and water, power and environmental interests. The programs' objectives are to recover endangered fish species while water use and development proceeds in compliance with the Endangered Species Act.

I appreciate the subcommittee's past support and request the subcommittee's assistance for fiscal year 2010 funding to ensure the Bureau of Reclamation's continuing financial participation in these vitally important programs.

PREPARED STATEMENT OF APS

Dear Chairman Dorgan and Senator Bennett, we are requesting your support for an appropriation in the President's recommended budget for fiscal year 2010 of $3,569,000 to the Bureau of Reclamation within the budget line item entitled "Endangered Species Recovery Implementation Program" for the Upper Colorado Region. The funding designation we seek is as follows: $1,219,000 for construction activities for the Upper Colorado River Endangered Fish Recovery Program; $1,950,000 for construction activities for the San Juan River Basin Recovery Implementation Program; and $400,000 for Fish and Wildlife Management and Development activities to avoid jeopardy. This funding is authorized by Public Law 106–392, as amended.

These highly successful, cooperative programs are ongoing partnerships among the States of New Mexico, Colorado, Utah and Wyoming, Indian tribes, Federal agencies and water, power and environmental interests. The programs' objectives are to recover endangered fish species while water use and development proceeds in compliance with the Endangered Species Act.

I appreciate the subcommittee's past support and request the subcommittee's assistance for fiscal year 2010 funding to ensure the Bureau of Reclamation's continuing financial participation in these vitally important programs.

PREPARED STATEMENT OF THE NEW MEXICO INTERSTATE STREAM COMMISSION

Dear Chairman Dorgan, attached herewith is my statement in support of funding for the U.S. Bureau of Reclamation's Colorado River Basin salinity control program. I sincerely appreciate your favorable consideration of this statement and request that it be made a part of the formal hearing record for fiscal year 2010 appropriations for the Bureau of Reclamation. Also, I fully support the statement of Jack Barnett, Executive Director, Colorado River Basin Salinity Control Forum, submitted to you in support of the Bureau of Reclamation's Colorado River Basin salinity control program.

PREPARED STATEMENT OF THE CENTRAL UTAH WATER CONSERVANCY DISTRICT

Dear Chairman Dorgan and Senator Bennett, we are requesting your support for an appropriation in the President's recommended budget for fiscal year 2010 of $3,569,000 to the Bureau of Reclamation within the budget line item entitled "Endangered Species Recovery Implementation Program" for the Upper Colorado Region. The funding designation we seek is as follows: $1,219,000 for construction activities for the Upper Colorado River Endangered Fish Recovery Program; $1,950,000 for construction activities for the San Juan River Basin Recovery Implementation Program; and $400,000 for Fish and Wildlife Management and Development activities to avoid jeopardy. This funding is authorized by Public Law 106–392, as amended.

These highly successful, cooperative programs are ongoing partnerships among the States of New Mexico, Colorado, Utah and Wyoming, Indian tribes, Federal agencies and water, power and environmental interests. The programs' objectives are to recover endangered fish species while water use and development proceeds in compliance with the Endangered Species Act.

I appreciate the subcommittee's past support and request the subcommittee's assistance for fiscal year 2010 funding to ensure the Bureau of Reclamation's continuing financial participation in these vitally important programs.

PREPARED STATEMENT OF THE SANTA CLARA VALLEY WATER DISTRICT

SUMMARY

This statement urges the subcommittee's support for a fiscal year 2010 appropriation of $40 million for California Bay-Delta Restoration.

STATEMENT OF SUPPORT CALFED BAY-DELTA PROGRAM

Background.—In an average year, half of Santa Clara County's water supply is imported from the San Francisco Bay/Sacramento-San Joaquin Delta estuary (Bay-Delta) watersheds through three water projects: The State Water Project, the Federal Central Valley Project, and San Francisco's Hetch Hetchy Project. In conjunction with locally developed water, this water supply supports more than 1.7 million residents in Santa Clara County and the most important high-tech center in the world. In average to wet years, there is enough water to meet the county's long-term needs. In dry years, however, the county could face a water supply shortage of as much as 100,000 acre-feet per year, or roughly 20 percent of the expected demand. In addition to shortages due to hydrologic variations, the county's imported supplies have been reduced due to regulatory restrictions placed on the operation of the State and Federal water projects.

There are also water quality problems associated with using Bay-Delta water as a drinking water supply. Organic materials and pollutants discharged into the Delta, together with salt water mixing in from San Francisco Bay, have the potential to create disinfection by products that are carcinogenic and pose reproductive health concerns.

Santa Clara County's imported supplies are also vulnerable to extended outages due to catastrophic failures such as major earthquakes and flooding.

Project Synopsis.—The CALFED Bay-Delta Program is an unprecedented, cooperative effort among Federal, State, and local agencies to restore the Bay-Delta. With input from urban, agricultural, environmental, fishing, and business interests, and the general public, CALFED has developed a comprehensive, long-term plan to address ecosystem and water management issues in the Bay-Delta.

Restoring the Bay-Delta ecosystem is important not only because of its significance as an environmental resource, but also because failing to do so will stall efforts to improve water supply reliability and water quality for millions of Californians and the State's trillion dollar economy and job base.

The passage of H.R. 2828 (Public Law 108–361) in 2004 reauthorized Federal participation in the CALFED Bay-Delta Program and provided $389 million in new and expanded funding authority for selected projects, including the San Luis Reservoir Low Point Improvement Project. The San Luis Project is one of six new projects, studies or water management actions authorized to receive a share of up to $184 million under the conveyance section of the bill. It is critical that Federal funding be provided to implement the actions authorized in the bill in the coming years.

Fiscal Year 2009 Funding.—Congress appropriated $40 million to the program in fiscal year 2009.

Fiscal Year 2010 Funding Recommendation.—It is requested that the congressional committee support an appropriation of $40 million for California Bay-Delta Restoration.

PREPARED STATEMENT OF THE COLORADO RIVER ENERGY DISTRIBUTORS ASSOCIATION (CREDA)

Dear Chairman Dorgan and Senator Bennett, the Colorado River Energy Distributors Association (CREDA) requests your support for an appropriation in the President's recommended budget for fiscal year 2010 of $3,569,000 to the Bureau of Reclamation within the budget line item entitled "Endangered Species Recovery Implementation Program" for the Upper Colorado Region. The funding designation is as follows: $1,219,000 for construction activities for the Upper Colorado River Endangered Fish Recovery Program; $1,950,000 for construction activities for the San Juan River Basin Recovery Implementation Program; and $400,000 for Fish and Wildlife Management and Development activities. This funding is authorized by Public Law 106–392, as amended.

CREDA members serve over 4 million electric consumers in the States of Arizona, Colorado, Nevada, Utah, New Mexico and Wyoming. CREDA members are the purchasers of the clean, renewable hydropower resources of the Federal Colorado River Storage Project (CRSP). CREDA is a participant in these cooperative programs. CRSP power revenues are continuing to be used to provide ongoing base funding for these programs. The programs' objectives are to recover endangered fish species while water use and development proceeds in compliance with the Endangered Species Act.

CREDA appreciates the subcommittee's past support and request the subcommittee's assistance for fiscal year 2010 funding to ensure the Bureau of Reclamation's continuing financial participation in these vitally important programs.

PREPARED STATEMENT OF THE UTAH WATER USERS ASSOCIATION

Dear Chairman Dorgan and Senator Bennett, we are requesting your support for an appropriation in the President's recommended budget for fiscal year 2010 of $3,569,000 to the Bureau of Reclamation within the budget line item entitled "Endangered Species Recovery Implementation Program" for the Upper Colorado Region. The funding designation we seek is as follows: $1,219,000 for construction activities for the Upper Colorado River Endangered Fish Recovery Program; $1,950,000 for construction activities for the San Juan River Basin Recovery Implementation Program; and $400,000 for Fish and Wildlife Management and Development activities to avoid jeopardy. This funding is authorized by Public Law 106–392, as amended.

These highly successful, cooperative programs are ongoing partnerships among the States of New Mexico, Colorado, Utah and Wyoming, Indian tribes, Federal agencies and water, power and environmental interests. The programs' objectives are to recover endangered fish species while water use and development proceeds in compliance with the Endangered Species Act.

I appreciate the subcommittee's past support and request the subcommittee's assistance for fiscal year 2010 funding to ensure the Bureau of Reclamation's continuing financial participation in these vitally important programs.

PREPARED STATEMENT OF DENVER WATER

Dear Chairman Dorgan and Senator Bennett, we are requesting your support for an appropriation in the President's recommended budget for fiscal year 2010 of $3,569,000 to the Bureau of Reclamation within the budget line item entitled "Endangered Species Recovery Implementation Program" for the Upper Colorado Region. The funding designation we seek is as follows: $1,219,000 for construction activities for the Upper Colorado River Endangered Fish Recovery Program; $1,950,000 for construction activities for the San Juan River Basin Recovery Implementation Program; and $400,000 for Fish and Wildlife Management and Development activities to avoid jeopardy. This funding is authorized by Public Law 106–392, as amended.

These highly successful, cooperative programs are ongoing partnerships among the States of New Mexico, Colorado, Utah and Wyoming, Indian tribes, Federal agencies and water, power and environmental interests. The programs' objectives are to recover endangered fish species while water use and development proceeds in compliance with the Endangered Species Act.

I appreciate the subcommittee's past support and request the subcommittee's assistance for fiscal year 2010 funding to ensure the Bureau of Reclamation's continuing financial participation in these vitally important programs.

PREPARED STATEMENT OF THE GRAND VALLEY WATER USERS ASSOCIATION

Dear Chairman Dorgan and Senator Bennett, we are requesting your support for an appropriation in the President's recommended budget for fiscal year 2010 of $3,569,000 to the Bureau of Reclamation within the budget line item entitled "Endangered Species Recovery Implementation Program" for the Upper Colorado Region. The funding designation we seek is as follows: $1,219,000 for construction activities for the Upper Colorado River Endangered Fish Recovery Program; $1,950,000 for construction activities for the San Juan River Basin Recovery Implementation Program; and $400,000 for Fish and Wildlife Management and Development activities to avoid jeopardy. This funding is authorized by Public Law 106–392, as amended.

These highly successful, cooperative programs are ongoing partnerships among the States of New Mexico, Colorado, Utah and Wyoming, Indian tribes, Federal agencies and water, power and environmental interests. The programs' objectives are to recover endangered fish species while water use and development proceeds in compliance with the Endangered Species Act.

I appreciate the subcommittee's past support and request the subcommittee's assistance for fiscal year 2010 funding to ensure the Bureau of Reclamation's continuing financial participation in these vitally important programs.

PREPARED STATEMENT OF THE CONFEDERATED TRIBES OF THE UMATILLA INDIAN RESERVATION

Honorable Chairman Dorgan, Ranking Member Bennett, members of the subcommittee, we respectfully request fiscal year 2010 appropriation of funds for two priority watershed restoration and agricultural water supply protection projects in Oregon and Washington, the Umatilla Basin Water Supply Study Project (previously funded under the Umatilla Basin Project Phase III, OR) and the Walla Walla General Investigation Stream Flow Restoration Feasibility Study (previously funded under the Walla Walla River Watershed, OR & WA).

—For the Umatilla Basin Water Supply Project, Oregon, we request an appropriation of $150,000 in the Bureau of Reclamation, Pacific Northwest Region, Water and Related Resources budget. This request will enable the Bureau to finish the study and brings to fruition the project that was initiated by the $450,000 committed by the Bureau of Reclamation to the project in fiscal year 2007, the approximately $488,000 and $342,000 provided by the subcommittee for fiscal year 2008 and fiscal year 2009 respectively.

—For the Walla Walla River Watershed, Oregon and Washington, we request an appropriation of $500,000 in the U.S. Army Corps of Engineers, Portland Division, Walla Walla District, General Investigations budget, and an additional $270,000 identified for the Corps to provide to the Confederated Umatilla Tribes through inter-governmental agreement to complete work required as project sponsor. This request will allow the district and the tribal government as Project Sponsor to move directly into Pre-Construction Engineering and Design after completion of Feasibility Report in 2010. This project is also known as Walla Walla River Basin Feasibility Report/Environmental Impact Statement.

Both the Umatilla Basin Water Supply Project and the Walla Walla General Investigation Stream Flow Restoration Feasibility Study are ongoing projects and have had administration and/or Congressional line item funding in past fiscal years.

UMATILLA RIVER BASIN, OREGON WATER SUPPLY PROJECT

By letter dated March 19, 2007, the Office of the Secretary of Interior responded favorably to the formal requests of the Oregon Congressional delegation and of the Confederated Tribes of the Umatilla Indian Reservation (CTUIR), Westland Irrigation District and Oregon Governor Theodore Kulongoski to initiate the study of the Umatilla Basin water development projects and concurrent settlement of the tribe's reserved water rights. Counselor to the Secretary, L. Michael Bogert, wrote "I will ask the Secretary's Indian Water Rights Office to appoint an Assessment Team . . ." and "I will also ask the Bureau of Reclamation to move forward with a concurrent appraisal level study of water supply options, including a full Phase III exchange . . . to help resolve the tribe's water rights claims."

The Bureau of Reclamation provided $450,000 in fiscal year 2007 for work on the Umatilla Basin water supply appraisal study. The subcommittee subsequently provided approximately $488,000 and $342,000 for this account in the fiscal year 2008 and fiscal year 2009 Energy and Water Appropriations bills. The Bureau is actively developing its Umatilla Basin Water Supply Study with these funds and will complete the project in 2010 with the requested funding.

The Umatilla Basin Water Supply Project is authorized by the Reclamation Feasibility Studies Act of 1966, 80 Stat. 707, Public Law 89–561, (Sept. 7, 1966).

The fiscal year 2010 request of $150,000 will enable the Bureau of Reclamation to complete the estimated 2½ year appraisal level study in mid 2010. The detailed appraisal study project will inform the concurrent Interior Department Indian Water Rights Assessment Team's work product. In 2010, Interior should have identified and estimated costs and feasibility of a clear project or suite of projects necessary to satisfy water rights of the CTUIR and in the Umatilla River.

This fiscal year 2010 request follows on the work of the Bureau of Reclamation, authorized by the Umatilla Basin Project Act of 1988 (100 Public Law 557; 102 Stat. 2782 title II), to construct and operate the Phase I Exchange with West Extension Irrigation District and the Phase II Exchange with Hermiston and Stanfield Irrigation Districts. Heralded as one of the most successful stream flow restoration and salmon recovery projects in the Columbia River Basin, the Umatilla Basin Project resulted in partially restored stream flows in the Umatilla River and successful reintroduction of spring Chinook, fall Chinook and Coho salmon. After nearly a century of dry river bed in summer months and extinction of all salmon stocks, there has been an Indian and non-Indian salmon fishery nearly every year in the Umatilla River since the project was completed in the mid-1990s.

Completion of the Water Supply Study and the concurrent Tribal Water Rights Assessment is supported and endorsed by the Honorable Governor Ted Kulongoski

and by local irrigation districts including specifically Westland Irrigation District, the Umatilla County Commission, and local municipalities including specifically the city of Irrigon.

WALLA WALLA BASIN, OREGON AND WASHINGTON, GI FEASIBILITY STUDY

In its eighth and final full year of work leading to Study completion, the U.S. Army Corps of Engineers' feasibility study will complete a detailed analysis of the preferred alternative selected to restore stream flows in the Walla Walla River. Drained nearly dry during summer months by irrigation in Oregon and Washington, the Walla Walla River is within the aboriginal lands of the CTUIR and the complete loss of salmon violates the agreement by the United States in the Treaty of 1855 to protect these fish.

Since the study's inception, approximately $4 million of Federal funds have either been budgeted or appropriated for completion of the Study through fiscal year 2009. The Walla Walla District will complete the Feasibility Study Report in fiscal year 2010 and this request for $500,000 for the Corps and $270,000 for the tribe will allow the District and CTUIR to move directly into initiation of Pre-Construction Feasibility and Design phase.

The Feasibility Study Project is authorized by the Senate Committee on Public Works July 27, 1962 (Columbia River and Tributaries), 87th Congress, House Document No. 403 and initiated as a result of a positive Reconnaissance Report for the Walla Walla River Watershed (1997) under a General Investigation study.

The CTUIR is the formal sponsor of the Corps of Engineers Feasibility Study and has provided over $4.0 million in in-kind contributions. Additionally, the State of Washington Department of Ecology has provided $400,000 to the Feasibility Study. This is the first year the CTUIR will request Federal funding, over and above that requested for Corps of Engineers work, to enable the tribe's continuation as Project Sponsor. Because of the unique status as a Federal-recognized Indian tribe with Treaty Rights to the Walla Walla Basin, and owing to the fact the CTUIR is the formal sponsor of the Project, the Confederated Umatilla Tribes request an additional appropriation of $270,000 to support their sponsor-required work of real estate transactions and water right permitting from Oregon and Washington. This will allow the tribe to initiate this work and will necessitate additional and continued 2011 support to fund acquisition of real property and other related activities. Prior to addressing this unique situation in an upcoming Water Resources Development Act bill, CTUIR requests the subcommittee consider this request as a clear exception to the standard requirement that non-Federal sponsors provide non-Federal funding.

Support for the completion of the Feasibility Study and moving to construction of the project is strong and diverse and includes the Honorable Governor of Washington Christine Gregoire, the Honorable Governor of Oregon Ted Kulongoski, the Walla Walla Watershed Alliance, the Walla Walla Basin Watershed Council, basin irrigation districts, local State legislators, local governments and many local and regional advocacy groups.

CONCLUSION

In closing, the CTUIR appreciates the opportunity to provide this testimony in support of adding funds for the ongoing Umatilla River Basin Water Supply Project, Bureau of Reclamation, and the Walla Walla River Basin Watershed Restoration Feasibility Study, Army Corps of Engineers. Both projects are critically important to protecting existing agricultural economies, completing future water supply development and concurrently restoring stream flows and recovering threatened salmon and other Columbia River Basin fish stocks.

Thank you.

PREPARED STATEMENT OF THE UNCOMPAHGRE VALLEY WATER USERS ASSOCIATION

Dear Chairman Dorgan and Senator Bennett, we are requesting your support for an appropriation in the President's recommended budget for fiscal year 2010 of $3,569,000 to the Bureau of Reclamation within the budget line item entitled "Endangered Species Recovery Implementation Program" for the Upper Colorado Region. The funding designation we seek is as follows: $1,219,000 for construction activities for the Upper Colorado River Endangered Fish Recovery Program; $1,950,000 for construction activities for the San Juan River Basin Recovery Implementation Program; and $400,000 for Fish and Wildlife Management and Develop-

ment activities to avoid jeopardy. This funding is authorized by Public Law 106–392, as amended.

These highly successful, cooperative programs are ongoing partnerships among the States of New Mexico, Colorado, Utah and Wyoming, Indian tribes, Federal agencies and water, power and environmental interests. The programs' objectives are to recover endangered fish species while water use and development proceeds in compliance with the Endangered Species Act.

I appreciate the subcommittee's past support and request the subcommittee's assistance for fiscal year 2010 funding to ensure the Bureau of Reclamation's continuing financial participation in these vitally important programs.

PREPARED STATEMENT OF THE UPPER GUNNISON RIVER WATER CONSERVANCY DISTRICT

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DEPARTMENT OF ENERGY

PREPARED STATEMENT OF THE GAS TURBINE ASSOCIATION (GTA)

The Gas Turbine Association appreciates the opportunity to provide the United States Senate Committee on Appropriations Subcommittee on Energy and Water Development with our industry's statement recommending fiscal year 2010 funding levels for the Department of Energy.

GTA recommends that the fiscal year 2010 appropriation for Fossil Energy include $45 million for the Advanced Turbines Program to meet critical national goals of fuel conservation, fuel flexibility (including syngas and hydrogen), greenhouse gas reduction, and criteria pollutant reduction. We also recommend that Congress take appropriate action to ensure the Office of Energy Efficiency and Renewable Energy, Industrial Technologies Program fiscal year 2010 appropriation include $10 million, directed towards small gas turbine research, as part of the Distributed Energy program to achieve goals similar to those referenced above for the Fossil Energy initiative. In both cases a public-private partnership is needed to ensure success.

It is clear that dramatic reductions in greenhouse gas emissions are in the national interest. It is also clear that our economy needs more electric generation capacity to resume and promote further growth. Without new technology, the power generation industry will be hard pressed to produce additional electric capacity, while at the same time meeting the strict greenhouse gas emissions standards being set by States and the Federal Government.

Federal investment in research and technology development for advanced gas turbines that are more versatile, cleaner, and have the ability to burn hydrogen-bearing reduced carbon synthetic fuels and carbon-neutral alternative fuels is needed to ensure the reliable supply of electricity in the next several decades. Domestic coal based Integrated Gasification Combined Cycle (IGCC) with carbon capture and sequestration is one such approach that would significantly supplement available supplies of domestic natural gas to guarantee an adequate supply of clean and affordable electric power. Alternative fuel choices range from imported LNG, coal bed methane, and coal-derived synthetic or process gas to biogas, waste-derived gases and hydrogen. Research is needed to improve the efficiency, reduce capital and operating costs, and reduce emissions.

TECHNOLOGIES FOR ADVANCED IGCC/H_2 GAS TURBINE—REDUCING THE PENALTY FOR CO_2 CAPTURE

At current rates of research and development it is unlikely that the Nation will have available the gas turbine technologies to meet the needs of FutureGen type power plants. The advancement of these technologies must be undertaken by the DOE since there is currently no pathway to the development, insertion, and maturation of these technologies into the Nation's electric power infrastructure based on market forces. Thus, a combined effort by the public and private sectors is necessary.

The turbines and related technologies being developed under the DOE FE Advanced Turbines program will directly advance the performance and capabilities of future power generation with CO_2 capture and sequestration. Advances are needed to offset part of the power plant efficiency and output reductions associated with CO_2 capture. Program funding is required to cost-share in the technology development of advanced hydrogen/syngas combustors and other components to realize the DOE goals.

Several GTA member companies are working cost-share programs with the DOE to develop technologies for advanced gas turbine power plants with carbon capture. These technologies will: (1) increase plant efficiency; (2) increase plant capacities; and (3) allow further reductions in combustion emissions of hydrogen rich fuels associated with CO_2 capture and sequestration. This will help offset some of the efficiency and output penalties associated with CO_2 capture. These programs are funding technology advancement at a much more rapid rate than industry can do on their own.

The need for increased levels of Federal cost-share funding is immediate. The funding levels in past years for the Advanced Turbines program has been inadequate to meet DOE's Advanced Power System goal of an IGCC power system with high efficiency (45–50 percent HHV), near-zero emissions and competitive capital cost. To meet this goal, the researchers must demonstrate a 2 to 3 percentage point improvement in combined cycle efficiency above current state-of-the-art Combined Cycle turbines in IGCC applications.

The plan for the IGCC-based FutureGen-type application is to develop the flexibility in this same machine with modifications to operate on pure hydrogen as the primary energy source while maintaining the same levels of performance in terms efficiency and emissions. The goal is to develop the fundamental technologies needed for advanced hydrogen turbines and to integrate this technology with CO_2 separation, capture, and sequestration into a near-zero emission configuration that can provide electricity with less than a 10 percent increase in cost over conventional plants by 2012.

The Advanced Turbines program is also developing oxygen-fired (oxy-fuel) turbines and combustors that are expected to achieve efficiencies in the 44–46 percent range, with near-100 percent CO_2 capture and near-zero NO_X emissions. The development and integrated testing of a new combustor, turbine components, advanced cooling technology, and materials in oxy-fuel combustors and turbines is needed to make these systems commercially viable.

The knowledge and confidence that generating equipment will operate reliably and efficiently on varying fuels is essential for the deployment of new technology. Years of continued under funding of the Advanced Turbines program has already delayed the completion dates for turbine R&D necessary for advanced IGCC, as well as timing for a FutureGen-type plant validation.

MEGA-WATT SCALE TURBINE R&D

In the 2005 Enabling Turbine Technologies for High-Hydrogen Fuels solicitation, the Office of Fossil Energy included a topic area entitled "Development of Highly Efficient Zero Emission Hydrogen Combustion Technology for Mega-Watt Scale Turbines". Turbine manufacturers and combustion system developers responded favorably to this topic, but DOE funding constraints did not allow any contract awards. The turbine industry recommends a follow-up to this solicitation topic that would allow the developed combustion technology to be tested in machines at full scale conditions and allow for additional combustion technology and combustor development for high-hydrogen fuels.

The turbine industry believes that this technology is highly relevant to industrial coal gasification applications including: (1) site-hardened black-start capability for integrated gasification combined cycle applications (the ability to restart an IGCC power plant when the electric grid has collapsed); (2) supplying plant electric load fueled on syngas or hydrogen; (3) increasing plant steam cycle capacity on hot days when large amounts of additional power are needed; and (4) in gas turbines for com-

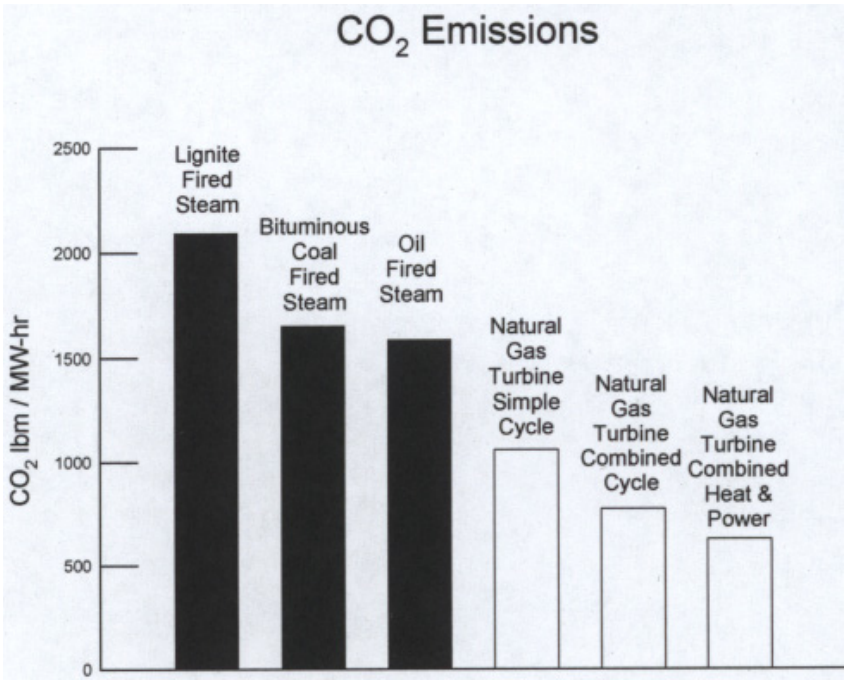
pression of high-hydrogen fuels for pipeline transportation. The development of MW-scale turbines (1–100 MW) fueled with high-hydrogen fuels will promote the sustainable use of coal. In addition, highly efficient aeroderivative megawatt scale engines operate under different conditions than their larger counterparts and are installed for peaking or distributed generation applications. Funding is required to design efficient and low emissions combustors that accommodate the new fuels.

HIGH-EFFICIENCY, LOW CARBON, FUEL FLEXIBLE SMALL GAS TURBINES FOR DISTRIBUTED ENERGY

The Distributed Energy Program of EERE's Industrial Technologies program should include $10 million to initiate small gas turbine research and development programs to dramatically increase their fuel efficiency (and thus reduce their carbon footprint) and to make them fuel flexible. Distributed energy is critical to building a efficient, diverse, and robust electric power infrastructure. Specifically, this program should set a goal of 42 percent efficiency (on a lower heating value basis) for advanced small gas turbines while enhancing their fuel flexibility to include dual fuel and alternative fuel utilization. These programs should build on the success of the Advanced Micro-turbine program of past years to overcome the barriers to insertion of Distributed Energy into our Nation's electrical infrastructure and to build on potential synergies between advanced small gas turbines and the advances in waste heat capture such as combined heat and power (CHP) and organic Rankine cycle (ORC).

GAS TURBINES REDUCE GREENHOUSE GAS EMISSIONS

The gas turbine industry's R&D partnership with the Federal Government has steadily increased power plant efficiency to the point where natural gas fired turbines can reach combined cycle efficiencies of 60 percent, and quick-start simple cycle peaking units can reach 46 percent. The gas turbine's clean exhaust can be used to create hot water, steam, or even chilled water. In such combined heat and power applications, overall system efficiency levels can reach 60 to 85 percent LHV. This compares to 40–45 percent for even the most advanced thermal steam cycles (most of which are coal fired).



Gas turbines already play a very significant role in minimizing greenhouse gas emissions worldwide. Gas turbines are both more efficient and typically burn lower carbon fuels compared to other types of combustion-based power generation and mechanical drive applications. The Nation needs to reinvigorate the gas turbine/Government partnership in order to develop new, low carbon power plant solutions without increasing our reliance on natural gas. This can be done by funding research to make gas turbines more capable of utilizing hydrogen and synthetic fuels as well as increasing the efficiency, durability and emissions capability of natural gas fired turbines. If Congress provides adequate funding to DOE's turbine R&D efforts, technology development and deployment will be accelerated to a pace that will allow the United States to achieve its emissions and energy security goals.

The GTA respectfully requests $45 million in fiscal year 2010 appropriations for the Fossil Energy Advanced Turbines Program, and $10 million for the Energy Efficiency & Renewable Energy ITP/Distributed Energy Program directed towards small turbines research in fiscal year 2010 to meet critical national goals of fuel conservation, fuel flexibility (including syngas and hydrogen), greenhouse gas reduction, and criteria pollutant reduction.

GTA MEMBER COMPANIES

Alstom Power; Capstone Turbine Corporation; GE Energy; Florida Turbine Technologies; Rolls-Royce; Siemens Energy; Solar Turbines; Pratt & Whitney Power Systems; Strategic Power Systems; and VibroMeter.

PREPARED STATEMENT OF THE FEDERATION OF AMERICAN SOCIETIES FOR EXPERIMENTAL BIOLOGY

On behalf of the Federation of American Societies for Experimental Biology (FASEB), I respectfully request an fiscal year 2010 appropriation for the Department of Energy Office of Science (DOE SC) of 8 percent over fiscal year 2009. This increase will provide the Office of Science with the ability to sustain support for critical research programs that spur scientific innovation, fuel the economy, move the Nation towards energy independence and improve human health.

As a Federation of 22 professional scientific societies, FASEB represents nearly 90,000 life scientists, making us the largest coalition of biomedical research associations in the Nation. FASEB's mission is to advance health and welfare by promoting progress and education in biological and biomedical sciences, including the research funded by VA, through service to its member societies and collaborative advocacy. FASEB enhances the ability of biomedical and life scientists to improve—through their research—the health, well-being and productivity of all people.

FASEB is composed of 22 societies with more than 80,000 members, making it the largest coalition of biomedical research associations in the United States. Our mission is to advance health and welfare by promoting progress and education in biological and biomedical sciences, including the science supported by DOE SC.

"[T]he Office of Science is commit[ed] to invest in some of the most exciting and daring research that humankind has ever conceived, from explorations into the origins of our universe and the constituents of life, to the scientific knowledge that will deliver new, clean, and abundant sources of energy to meet world needs for 10 billion people by the year 2050."

This bold statement from the DOE SC Strategic Plan[1] highlights DOE SC's unique role in serving as a catalyst for discoveries in basic energy research and in environmental and life sciences as well as computational science. The research programs and facilities at DOE SC support further cutting-edge science and technological innovations that safeguard our Nation, strengthen our economy, and improve the daily lives of the American people.

Each year, more than 25,000 researchers from universities, other government agencies and private industry use DOE SC's extraordinary system of national laboratories and research facilities. DOE's state-of-the-art facilities comprise the most advanced research system of its kind in the world and permit the agency to support unique and vital programs in climate change, geophysics, genomics, materials and chemical sciences, and life sciences. The Office of Science's emphasis on interdisciplinary scientific research supports and extends the basic research that other Federal agencies sponsor, and much of the research that non-DOE science agencies fund could not occur in the absence of DOE's highly specialized research infrastructure.

[1] United State Department of Energy. 2004. Office of Science Strategic Plan. http://www.er.doe.gov/about/Strategic__Plan/Feb-2004-Strat-Plan-screen-res.pdf.

DOE's contribution to research and science extends beyond the benefits of its national laboratories. The Office of Science is also a principal supporter of graduate students and early career postdoctoral researchers at U.S. colleges and universities. Almost 50 percent of DOE SC's research funding supports research at over 300 colleges, universities and institutes nationwide.

DISCOVERIES THAT IMPROVE HEALTH & WELL-BEING

Scientists whom DOE has supported have uncovered a wealth of basic biological knowledge and have produced astounding health technologies.

—*Restoring Function to Patients with Disabilities*.—Office of Science funding led to the bion® microstimulator, a miniature rechargeable and implantable neurostimulator that may benefit 50 million Americans who suffer from debilitating conditions by stimulating viable nerves and muscles to prevent muscle deterioration and help restore nerve and muscle function. The device can address a wide variety of diseases and disorders, including incontinence, chronic headaches, peripheral pain, angina and epilepsy.

—*Targeted Cancer Therapies*.—DOE scientists have developed the Cesium-131 Brachytherapy Seed, one of the most significant advancements in brachytherapy (short distance treatment involving the use of carefully placed, radioactive "seeds") for cancer treatment in nearly 20 years. In treating prostate and other cancers, it delivers a highly targeted therapeutic dose of radiation to the tumor quickly and with potentially fewer side effects.

Although research DOE SC has funded has already positively influenced our lives and health, opportunities on the horizon are even more exciting. For example, the DOE–SC Artificial Retina Project is developing an artificial retina that can restore sight in patients who are blind; the technology can also help persons who are deaf as well as those who have spinal cord injuries, Parkinson's disease and almost any other neurological disorder. Additionally, researchers at the Argonne National Laboratory and the University of Chicago are engineering an "ice slurry" to cool organs; the slurry may help save stroke or cardiac arrest patients from the destruction of their brain and heart cells.

CLEANER AND MORE SECURE ENERGY FUTURE

Fundamental discoveries in basic energy sciences funded by DOE SC are already having an impact on the energy we use daily and are continuing to pave the way for the next generation of environmentally-conscious, sustainable energy sources. As a recent report[2] on future energy needs produced by DOE stated, "Major new discoveries are needed, and these will largely come from basic research programs."

—*Building Better Batteries*.—DOE SC discoveries resulted in lithium batteries that offer high-energy storage capacity in an environmentally benign package. Lithium batteries are widely used in both consumer and defense applications, such as cellular telephones and notebook computers. Moreover, DOE researchers have generated a solid-state, fluoride-based battery that is safer than traditional batteries in high-temperature applications such as oil, gas and geothermal drilling.

—*Hydrogen Technologies*.—At the Argonne National Lab, scientists have constructed the world's fastest commercially producible hydrogen sensor that can be used in hydrogen-powered cars to detect unsafe levels of hydrogen. Scientists have also developed materials resistant to metal dusting degradation, which will be used to make more durable equipment in plants that manufacture hydrogen.

Researchers are also on the brink of developing new technologies to meet our most pressing energy needs. In an effort to increase the amount of c solar power in the Nation's energy supply, DOE SC is investing in research aimed at improving conversion of solar energy to both electricity and chemical fuels. Moreover, fundamental research awards have been made to institutions nationwide as scientists work to overcome key hurdles in hydrogen production, storage and conversion in an effort to increase the feasibility of hydrogen fuel.

RECOGNIZING THE IMPORTANCE OF DOE RESEARCH

The passage of the America Creating Opportunities to Meaningfully Promote Excellence in Technology, Education and Science (COMPETES) Act of 2007 renewed our Nation's commitment to science and technology and established a 7 year dou-

[2] United States Department of Energy, Basic Energy Sciences Advisory Committee. 2003. Basic Research Needs to Assure a Secure Energy Future. http://www.sc.doe.gov/bes/reports/files/SEF_rpt.pdf.

bling path for the budget of DOE SC. In 2009, generous funding provided in the Omnibus Appropriations Act and the American Recovery and Reinvestment Act began to fulfill the commitment Congress has made to scientific and technological innovation. In 2010, we ask that this support continue, both to protect the investments that have been made, and to realize the potential of the scientific enterprise. An fiscal year 2010 funding level for DOE SC of 8 percent over fiscal year 2009 will allow DOE to greatly enhance its groundbreaking research portfolio and permit it to confront current and future energy and health challenges. Scientists who have received DOE SC funding have made and continue to make extraordinary breakthroughs that contribute to the quality of our lives and facilitate advances that drive our Nation's innovative technologies.

PREPARED STATEMENT OF THE BIOMASS ENERGY RESEARCH ASSOCIATION (BERA)

SUMMARY

This testimony pertains to fiscal year 2010 appropriations for biomass energy research, development, and demonstration (RD&D) conducted by the Department of Energy (DOE) Office of Energy Efficiency and Renewable Energy (EERE), Biomass Program (OBP). This RD&D is funded by the Energy and Water Development bill, under Energy Supply and Conservation, Energy Efficiency and Renewable Energy. BERA recommends a total appropriation of $400 million in fiscal year 2010 for Biomass and Biorefinery Systems R&D. This is an increase of ~$75 million over the U.S. Department of Energy request for fiscal year 2010 for this programmatic area. Substantial investments in new technology and demonstrations will be needed to meet the RFS goals for advanced biofuels. Specific lines items for the DOE biomass RD&D budget are below (also see Table 1):

—$40,000,000 for Feedstock Infrastructure development (regional partnerships, harvesting and storage technology, exploration of new feedstocks).

—$60,000,000 for Biochemical Conversion Platform Technology (emphasis on cost-effective pretreatment technologies and fermentation organisms—both are large contributors to high cost of biofuels production from cellulosic materials).

—$60,000,000 for Thermochemical Conversion Platform Technology (conversion of plants, oil crops, energy crops, wood and forest resources to oils, long chain hydrocarbons, or other fuels/intermediates).

—$200,000,000 for Utilization of Platform Outputs: Integrated Biorefinery Technologies demonstrations. Technology demonstrations reduce technical and economic risk and accelerate the potential for private investment.

—$40,000,000 for Utilization of Platform Outputs: Bioproducts (chemicals and materials).

BACKGROUND

On behalf of BERA's members, we would like to thank you, Mr. Chairman, for the opportunity to present the recommendations of BERA's Board of Directors for the high-priority programs that we strongly urge be continued or started. BERA is a non-profit association based in the Washington, DC area. It was founded in 1982 by researchers and private organizations conducting biomass research. Our objectives are to promote education and research on the economic production of energy and fuels from biomass, and to serve as a source of information on biomass RD&D policies and programs. BERA does not solicit or accept Federal funding.

TABLE 1.—FISCAL YEAR 2010 BIOMASS/BIOREFINERY SYSTEMS R&D, ENERGY SUPPLY & CONSERVATION, DOE/EERE BIOMASS PROGRAM

[In millions of dollars]

Program Area	Description of RD&D	Total
Feedstock Infrastructure	Regional feedstock partnerships Joint development of storage and harvesting technology Plants species amenable to thermochemical (e.g., high lignin) and biochemical (e.g., more easily processed lignin) processes	$40.0

TABLE 1.—FISCAL YEAR 2010 BIOMASS/BIOREFINERY SYSTEMS R&D, ENERGY SUPPLY & CONSERVATION, DOE/EERE BIOMASS PROGRAM—Continued

[In millions of dollars]

Program Area	Description of RD&D	Total
Biochemical Conversion Platform R&D.	Next generation biofuels/processes using a range of feedstocks Technologies to reduce costs of pretreatment Advanced biological routes that combine biological methods with pretreatment to reduce enzyme costs dramatically Seed funding for revolutionary new concepts, including small businesses and inventors	60.0
Thermochemical Conversion Platform R&D.	Next generation biofuels and processes that can use a range of feedstocks (pyrolysis, gasification, routes) Technologies to reduce costs of pretreatment Seed funding for revolutionary new concepts, including small businesses and inventors	60.0
Platform Outputs: Integrated Biorefineries.	Direct funding (cost-shared) of biochemical and thermochemical conversion technologies Public awareness and outreach programs National center for infrastructure issues Underwriting of loan guarantees	200.0
Platform Outputs: Bioproducts ..	Co-production of chemicals and materials from biochemical and thermochemical output streams as alternatives to petroleum-derived chemicals	40.0
TOTAL	.....	400.0

There is a growing urgency to diversify our energy supply, develop technologies to utilize indigenous and renewable resources, reduce U.S. reliance on imported oil, and mitigate the impacts of energy on climate and the environment. The benefits will be many—support for economic growth, new American jobs, enhanced environmental quality, and fewer energy-related contributions to climate change. Economic growth is fueled and sustained in large part by the availability of reliable, cost-effective energy supplies. The import of oil and other fuels into the United States is growing steadily, despite increased volatility in supply and prices, especially petroleum and natural gas. This creates an economic burden on industry and consumers alike, and adversely impacts our quality of life. A diversified, sustainable energy supply is critical to meeting our energy challenges and maintaining a healthy economy with a competitive edge in global markets. Biomass can diversify U.S. energy supply in several ways, and biofuels is only one avenue:

—Biomass is the single renewable resource with the ability to directly replace liquid transportation fuels.

—Biomass can be used as a feedstock to supplement the production of chemicals, plastics, and materials now produced from crude oil.

—Gasification of biomass produces a syngas that can be utilized to supplement the natural gas supply, generate electricity, or produce fuels and chemicals.

While biomass will not solve all our energy challenges, it can certainly contribute to the diversity of our supply, and do so in a sustainable way, while minimizing impacts to the environment or climate. The Energy Independence and Security Act (EISA) of 2007 mandates increased use of alternative fuels, with a substantial portion to come from cellulosic biomass. To meet the ambitious EISA goals will require aggressive support for RD&D to move technology forward and reduce technical and economic risk.

OVERALL BERA RECOMMENDATIONS FOR U.S. DOE/EERE BIOMASS RD&D

—*Make Investments to Accelerate Development of Next Generation Biofuels/Processes [Platforms Research and Development—Biochemical and Thermochemical Platform R&D].*—Balance funding so more is allocated toward next generation biofuels and processes that include both biochemical and thermochemical routes, including pyrolysis, gasification, and others, and hybrid routes; emphasize processes that can use a range of biomass types. Include advanced biological routes that better integrate simplified combined biological methods with pretreatment to reduce enzyme costs dramatically as enzymes followed by pretreatment are the major cost items that are susceptible to change.

—*Make Investments to Bring Down the Cost of Biomass Pretreatment [Platforms Research and Development—Biochemical and Thermochemical Platform*

R&D].—Invest substantial funds to bring down the capital and operating costs of pretreatment of cellulosic biomass. This is very important and deserves emphasis as pretreatment is a major factor in the cost of production and also influences the cost of the rest of process. It remains a major hurdle for commercialization of new processes and achieving economic viability of operating biofuels facilities. Developing pretreatment processes that integrate better with the entire process are a critical aspect.

—*Underwrite an Unprecedented Number of Loan Guarantees and Directly Fund a Wide Range of Demonstrations [Utilization of Platform Outputs: Integrated Biorefineries].*—These actions will raise confidence in private investment during uncertain economic times—facilities need to be put in the ground now to make a difference in the mid and long term. Technology demonstrations reduce technical and economic risk and accelerate the potential for private investment. A major concern is that DOE has not approved and disbursed a single loan guarantee under the innovative technology program established by EPAct 2005. However, DOE Secretary Steven Chu indicates he is committed to reform to speed up the loan guarantee process. We suggest that DOE provide ~50 percent of capital for first plants with the rest being private funds to compensate for the risk of first projects while assuring enough private capital is on the line for proper due diligence. This level of guarantee is vital—introducing any new fuel in today's petroleum-heavy market is extremely challenging. The capital costs for petroleum processing are paid off, making it a cash producer, while a biofuels facility must cover not only cash costs but make a high return on capital to compensate for first time risk. This is a heavy lift for first-of-a-kind technology.

—*Set Aside Funding for Demonstration of Revolutionary, but Unproven New Concepts [Platforms Research and Development—Biochemical and Thermochemical Platform R&D].*—Seed funding is needed for revolutionary new ideas that show great promise. We must appeal to the great American sense of innovation and invention to bring ideas to the table that will help solve our energy crises. Small, entrepreneurial inventors and businesses should be part of this equation. This is an important, but riskier proposition, and will take longer to allow for successive funding of ideas and demonstrations.

—*Invest More Funds in Development of Cost-effective New Bioproducts [Utilization of Platform Outputs: Integrated Biorefineries].*—Some chemicals could be produced from biomass, reducing our dependence on oil-derived chemicals and materials that go into a myriad of consumer goods from paint to food to drugs to plastics. Positive economic returns (and improved margins for integrated biorefineries) could be achieved by production of value-added co-products, whether the facility is based on thermochemical or biochemical technology. Current funding for this area is extremely limited. The challenge is that large plants are needed for economies of scale, thereby favoring biofuels. Chemicals can improve returns in a fuels biorefinery and provide scale advantages, but financing construction of projects involving more than one product is risky.

—*Invest in Study of New Non-food, Non-commodity Biomass [Feedstocks Infrastructure].*—This includes algae, selected perennial grasses, wood, and waste (of any kind, industrial, construction, food processing, etc); include an understanding of the viability of these resources (yields, production issues, chemistry, etc) for producing a wide range of fuels (analogs for gasoline, diesel, jet fuel, marine fuel, etc). This should include developing plants species that are more amenable to thermochemical (e.g., high lignin) and biochemical (e.g., low lignin, more easily processed lignin) processing.

—*Invest Significant Resources on Outreach to Increase Public Awareness [Utilization of Platform Outputs].*—The importance of public opinion cannot be overstated. Increasing awareness and understanding of biofuels and their impacts on our energy situation is critical. This includes understanding the positive environmental impacts, and dispelling of misperceptions—we need to get the truth out there, good and bad—and enable consumers to make good choices. Funding should include incentives to States to get the word out and educate the public—and make this information available where people fuel up—at local filling stations and grocery stores, etc.

—*Jointly Fund (With USDA, DOT, EPA) a National Center to Address Infrastructure Issues [Utilization of Platform Outputs].*—A national center for centralized information and technology exchange is needed, covering all areas of infrastructure from storage and transport of feedstocks to blending, storage and distribution of fuels to consumers. This center would incorporate a public-private partnership model to encourage investment in infrastructure. Infrastructure has not received much attention, but could severely impede reaching EISA RFS goals.

PREPARED STATEMENT OF THE STATE TEACHERS' RETIREMENT SYSTEM, STATE OF CALIFORNIA

Department of Energy—Elk Hills School Lands Fund: $9.7 million for fiscal year 2010 installment of Elk Hills compensation.

Congress should appropriate the funds necessary to fulfill the Federal Government's settlement obligation to provide compensation for the State of California's interest in the Elk Hills Naval Petroleum Reserve.

SUMMARY

Acting pursuant to congressional mandate, and in order to maximize the revenues for the Federal taxpayer from the sale of the Elk Hills Naval Petroleum Reserve by removing the cloud of the State of California's claims, the Federal Government reached a settlement with the State in advance of the sale. The State waived its rights to the Reserve in exchange for fair compensation in installments stretched out over an extended period of time. The State respectfully requests an appropriation of at least $9.7 million in the subcommittee's bill for fiscal year 2010, in order to meet the Federal Government's obligations to the State under the settlement agreement.

BACKGROUND

Upon admission to the Union, States beginning with Ohio and those westward were granted by Congress certain sections of public land located within the State's borders. This was done to compensate these States having large amounts of public lands within their borders for revenues lost from the inability to tax public lands as well as to support public education. Two of the tracts of State school lands granted by Congress to California at the time of its admission to the Union were located in what later became the Elk Hills Naval Petroleum Reserve.

The State of California applies the revenues from its State school lands to assist retired teachers whose pensions have been most seriously eroded by inflation. California teachers are ineligible for Social Security and often must rely on this State pension as the principal source of retirement income. Typically the retirees receiving these State school lands revenues are single women more than 75 years old whose relatively modest pensions have lost as much as half or more of their original value to inflation.

STATE'S CLAIMS SETTLED, AS CONGRESS HAD DIRECTED

In the National Defense Authorization Act for Fiscal Year 1996 (Public Law 104–106) that mandated the sale of the Elk Hills Reserve to private industry, Congress reserved 9 percent of the net sales proceeds in an escrow fund to provide compensation to California for its claims to the State school lands located in the Reserve.

In addition, in the act Congress directed the Secretary of Energy on behalf of the Federal Government to "offer to settle all claims of the State of California . . . in order to provide proper compensation for the State's claims." (Public Law 104–106, § 3415). The Secretary was required by Congress to "base the amount of the offered settlement payment from the contingent fund on the fair value for the State's claims, including the mineral estate, not to exceed the amount reserved in the contingent fund." (Id.)

Over the year that followed enactment of the Defense Authorization Act mandating the sale of Elk Hills, the Federal Government and the State engaged in vigorous and extended negotiations over a possible settlement. Finally, on October 10, 1996 a settlement was reached, and a written Settlement Agreement was entered into between the United States and the State, signed by the Secretary of Energy and the Governor of California, under which the State would receive 9 percent of the sales proceeds in annual installments over an extended period.

The Settlement Agreement is fair to both sides, providing proper compensation to the State and its teachers for their State school lands and enabling the Federal Government to maximize the sales revenues realized for the Federal taxpayer by removing the threat of the State's claims in advance of the sale.

FEDERAL REVENUES MAXIMIZED BY REMOVING CLOUD OF STATE'S CLAIM IN ADVANCE OF THE SALE

The State entered into a binding waiver of rights against the purchaser in advance of the bidding for Elk Hills by private purchasers, thereby removing the cloud over title being offered to the purchaser, prohibiting the State from enjoining or otherwise interfering with the sale, and removing the purchaser's exposure to treble damages for conversion under State law. In addition, the State waived equitable

claims to revenues from production for periods prior to the sale. The Reserve thereafter was sold for a winning bid of $3.53 billion in cash, a sales price that substantially exceeded earlier estimates.

CONGRESS SHOULD APPROPRIATE $9.7 MILLION FOR THE FISCAL YEAR 2010 INSTALLMENT OF ELK HILLS COMPENSATION

The State's 9 percent share of the adjusted Elk Hills sales price of $3.53 billion is $317.70 million. To date, Congress has appropriated seven installments of $36 million and one installment of $48 million that was reduced to $47.52 million by the 1 percent across-the-board rescission under the fiscal year 2006 Defense Appropriations Act, for total appropriations to date of $299.52 million of Elk Hills compensation owed to the State. Accordingly, the Elk Hills School Lands Fund should have a positive balance of at least $18.18 million.

We understand that Department of Energy personnel under the Bush administration had proffered four purported grounds for suspending further payments of Elk Hills compensation to the State. Each of these is a "red herring".

Red Herring No. 1. Finalization of respective equity shares of Federal Government and ChevronTexaco as selling co-owners of Elk Hills oil field still not completed.—The Bush administration's fiscal year 2009 budget request stated that "the timing and levels of any future budget request [for Elk Hills compensation] are dependent on the schedule and results of the equity finalization process" between the Federal Government and ChevronTexaco to determine the relative production over the years from their respective tracts in the Elk Hills field. (Fiscal Year 2009 Budget Appendix, at p. 403). But DOE already has held back $67 million, including $6.03 million from the State's share, to protect the Federal Government's interests in a "worst case scenario" for this equity process. The State has agreed to a "hold-back" of that amount to protect the Federal Government's interest. This reduces the available balance in the Elk Hills School Lands Fund to $12.15 million. In addition, DOE's fiscal year 2009 congressional budget request detail stated that the equity determination is in its final stages: "Of the four applicable zones [in Elk Hills], the Dry Gas Zone and Carneros Zone are finalized. The Stevens Zone [the largest in Elk Hills] is expected to be completed in 2008. A final recommendation for the Shallow Zone is pending." (p. 142). Accordingly, remaining uncertainty in the equity process thus provides no basis for withholding further payment of the State's Elk Hills compensation.

Red Herring No. 2. There is no money left in the Elk Hills School Lands Fund right now.—The Bush administration's fiscal year 2009 budget request stated: "Under the Act [that mandated the sale of Elk Hills], 9 percent of the net proceeds were reserved in a contingent fund in the Treasury for payment to the States. . . . Under the settlement agreement, $300 million has been paid to the State of California." (Fiscal Year 2009 Budget Appendix, at p. 403). The fiscal year 1999 budget request at the time of the sale notes that $324 million was deposited into the Elk Hills School Lands Fund. (Fiscal Year 1999 Budget Appendix, at pp. 378–9). A post-sale adjustment to the Elk Hills sales price reduced this amount to $317.7 million. Accordingly, after deducting the $300 million in payments to the State to date and the $6 million hold-back to protect the Federal Government's interests in the "worst case" scenario for the equity process, the Elk Hills Fund has ample funds available for appropriation of a further payment of compensation to the State.

Red Herring No. 3. No payment can be made to the State because of pending litigation between ChevronTexaco and DOE.—DOE has pointed to pending litigation brought by ChevronTexaco against DOE in the U.S. Court of Federal Claims (Docket No. 04–1365C) as a reason to suspend further payments to the State. This litigation alleges DOE personnel committed misconduct in the equity finalization process by having improper ex parte contacts and having the same DOE staff serve as both advocate for DOE's position and advisor preparing the decision documents for the decisionmaker. However, the California State Attorney General has analyzed this litigation and advised that this litigation is a claim for money damages for DOE staff misconduct that has no effect on the Federal Government's equity share, and so there is no effect on the State's share of compensation. Indeed, under the governing agreement between DOE and Chevron, Chevron had waived any right to contest the final equity determination in court. Hence this litigation provides no basis for withholding the rest of the State's compensation.

Red Herring No. 4. No payment can be made to the State because the State's share must be reduced by the equity finalization costs and environmental remediation costs and the final amount of such costs is not yet known.—The State's share of compensation is properly reduced by the "direct costs of sale" as required by Congress. Since

the sale took place over a decade ago, those costs are fixed and known. The State has agreed to bear its share of these sales expenses. However, DOE is seeking to charge against the State's share two additional categories of costs—costs of determining the equity ownership and environmental remediation—that constitute ongoing costs of operating the oil field, not sales expenses. The California State Attorney General advises that these do not properly constitute sales expenses chargeable against the State's share.

More specifically, the Settlement Agreement between the Federal Government and the State provides that the Federal Government shall pay the State "9 percent of the proceeds from the sale of the Federal Elk Hills Interests that remain after deducting from the sales proceeds the costs incurred to conduct such sale." This reflects the congressional direction that, "In exchange for relinquishing its claim, the State will receive 7 [9 in the final legislation] percent of the gross sales proceeds from the sale of the Reserve that remain after the direct expenses of the sale are taken into account." (House Rept. No. 104–131, Defense Authorization Act for fiscal year 1996, Public Law 104–106).

The State has agreed that the $27.13 million incurred for appraisals, accounting expenses, reserves report, and brokers' commission are appropriate sales expenses. Accordingly, the State's 9 percent share of these proper sales expenses reduces the available balance of the Elk Hills School Lands Fund by $2.44 million to $9.7 million.

Costs of conducting the equity adjustment are properly viewed as ongoing costs incurred due to the joint operation of the Elk Hills oil field by the Federal Government and ChevronTexaco, since the equity adjustment already was required under their joint operating agreement and related to pre-sale production revenues. Similarly, costs of environmental remediation of the Elk Hills field was a cost attributable to the prior operation of the field, which created any environmental problems that exist. The ongoing operational nature of this cost is underscored by the fact that the Federal Government is currently engaged in the phased environmental remediation of a Naval Petroleum Reserve that it is not selling—NPR–3 (Teapot Dome), as evidenced by the fiscal year 2009 budget request.

CONCLUSION

Therefore, of the current Elk Hills School Lands Fund balance of $18.18 million, taking into account the "hold-back" for worst case scenario under equity finalization and deducting the appropriate direct costs of conducting the sale, the State respectfully requests the appropriation of at least $9.7 million for Elk Hills compensation in the subcommittee's bill for the fiscal year 2010 installment of compensation, in order to meet the Federal Government's obligations to the State under the Settlement Agreement.

PREPARED STATEMENT OF INTEGRATED BUILDING AND CONSTRUCTION SOLUTIONS (IBACOS), INC.

IBACOS (Integrated Building and Construction Solutions) urges the Subcommittee on Energy and Water Development to provide $46 million for the Building America Program at the Department of Energy's (DOE) Office of Building Technologies in fiscal year 2010 Appropriations under the Office of Building Technologies, Residential Building Integration, Energy Efficiency and Renewable Energy. We further urge that the following language is included to ensure that the competitively selected Building America teams are funded at a percentage comparable to their historic funding: Of these funds, $35 million shall be provided for the research activities of the competitively selected Building America research teams, the Building America lead research laboratory, and other national laboratories conducting research to achieve Building America's specified energy performance targets.

Residential Buildings currently account for over 20 percent of the primary energy consumed by the United States. Each year, more than 1 million new homes are constructed and over a million are remodeled. Significant energy savings can be achieved at minimal increases in construction costs provided that a long term and consistent commitment is made to work in partnership with the housing industry. DOE's Building America Program has developed an industry-driven research approach that can reduce the average energy use in new housing by 50 percent by 2015, providing significant benefits to homeowners in terms of reduced utility bills and significant benefits to the U.S. economy by maintaining housing as a major source of jobs and economic growth. If building in significant energy savings isn't done now, the Nation risks using an extravagant amount of energy in the future.

In order to reduce reliance on foreign energy supplies and to support the stabilization of greenhouse gas emissions, we must invest appropriately in research in the areas of technology, systems integration, and builder processes to upgrade the performance of our housing stock; otherwise, we are mortgaging our future.

Research, development, and outreach activities performed by the competitively selected industry Teams in the Building America Program are the key element in DOE's strategy to reduce energy consumption in residential buildings. The Teams' activities focus on increasing the performance of new and existing homes by developing advanced energy systems that can be implemented on a production basis, while meeting consumer and building performance requirements.

While the Teams have been working on improving efficiency in housing since 1992, with successes being embodied in EPA's Energy Star Home program and DOE's Builders Challenge, they are now focused on the more difficult goal of creating strategies to achieve Zero Energy Homes (ZEH)—homes that produce as much energy as they use on an annual basis.

A NEW FRONTIER IN RESEARCH—ZERO ENERGY HOMES

The research needed to develop systems and strategies to achieve the long term goal of ZEH is not simply applying lessons learned; rather, fundamental research is still required. This R&D, performed by the Building America Teams, is truly high-risk, high-payoff research.

The research required to meet the goal of ZEH is costly and high risk:

—Significant basic research is required to develop and integrate new technologies into homes before they are proven effective enough to be applied in the field.

—This research is costly and risky, and not going to be undertaken by the industry alone.

—The life cycle of this research is significantly longer than that of comparable industries.

—The homebuilding industry is extremely fragmented, with homebuilders having little ability to drive research, and a lower than average financial commitment to investing in research.

—Mechanisms do not currently exist within the homebuilding industry to integrate new technologies and strategies effectively.

The research required to meet the goal of ZEH is also high-payoff for the following reasons:

—Once constructed, homes have a long lifespan, providing the opportunity for a durable long term reduction in energy use.

—Effective strategies to reduce energy use will positively impact consumers, as well as the Nation's energy demand.

—Successful research into integration strategies will allow new, high-risk technologies to be adopted more quickly and effectively.

BUILDING AMERICA COMPETITIVE TEAMS—RESEARCH AND IMPLEMENTATION IN THE REAL WORLD

The work of the Teams allows industry leadership to drive cost effective solutions that move us towards Zero Energy Homes. Building America partners have shown that homes with improved efficiency levels can have equal or lower purchase prices than conventional homes, in addition to much lower energy bills and operating costs, and increased building durability as well as occupant safety, health, and comfort. In addition to performing the fundamental research needed to advance the energy efficiency of our Nation's housing stock, the Building America Teams provide recommendations to a broad range of residential deployment partners including the EPA's Energy Star Homes Program, HUD's Partnership for Advancing Technologies in Housing Program, DOE's Builders Challenge, and many industry associations and universities. Furthermore, the Teams are perhaps the best resource for DOE to educate the builder community on technology and integration breakthroughs. This education has been, in part, demonstrated through successful projects, where high efficiency housing is being built and bought, such as Summerset at Frick Park (Pittsburgh, Pennsylvania); Noisette (North Charleston, South Carolina); Civano (Tucson, Arizona); The Landover Group (Virginia and Maryland); Forest Glen development in (Carol Stream, Illinois); Hunters Point Shipyard (San Francisco, CA); Stapleton (Denver, Colorado); Habitat for Humanity (Georgia, Colorado, Tennessee, Florida, Michigan, Texas and throughout the United States); Summerfield (San Antonio, Texas); Sun City (Las Vegas, Nevada); and others throughout the Nation as documented on www.buildingamerica.gov. The more than 500 private sector partners who work with the Teams are experts in home construction, building products and supply, architecture, engineering, community planning, and mortgage lending.

All construction material and labor costs for homes and communities constructed by Building America Teams are provided by DOE's private sector partners.

DOE's Role in the Residential Buildings Research Partnerships

Catalyzing research in residential construction necessary to increase the energy performance, and bringing together industry partners to leverage research dollars and expertise.

Matching advanced product research programs to the system integration efforts of the Building America Teams to ensure realistic approaches to increasing energy performance.

Reducing risk and increasing reliability of emerging technologies.

Providing scientific expertise through the involvement of the National Renewable Energy Laboratory (NREL) and other national laboratories.

Sharing critical information about research with several thousand associated building industry professionals and leveraging information through EPA, HUD, and private sector energy efficiency programs.

Program Goals

Reduce energy use in America's housing stock by 50 percent by 2015 and provide ZEH by the year 2025, integrating renewable energy when and where practical.

Research and develop the systems and strategies necessary to allow our Nation to deliver high performance houses in order to increase our national energy security.

Program Status

Through the competitively selected Teams, Building America works closely with America's lead builders, who produce approximately 50 percent of the Nation's new housing stock. Additionally, the program has been tasked with providing the research and development basis for the President's Partnership for Housing Energy Efficiency (PHEE). More than 30,000 homes have been constructed in 34 States. Increased funding is needed to address new program requirements including increased energy efficiency goals, increased need for technical support of lead builders, contractors, and suppliers for effective participation in the program, expansion of applications in existing building stock, expansion to multi-family housing stock, and design for integration of on-site and renewable power. Specifically, the incorporation of the ZEH goals into Building America research and development activities must be done in an integrated fashion via the existing competitively selected Building America teams, which have begun to include renewable energy technologies and on-site energy into some projects. The stated DOE goals of the program are unreachable without significant Team funding.

Recommendation for Fiscal Year 2010 Funding

Provide $46 million, for the Building America Program at the DOE's Office of Building Technologies in fiscal year 2010 appropriations (under the Office of Building Technologies, Residential Building Integration). Additionally, include language as follows to ensure that the competitive teams are funded at a percentage comparable to their historic funding:

"Of these funds, $35 million shall be provided for the research activities of the competitively selected Building America research teams, the Building America lead research laboratory, and other national laboratories conducting research to achieve Building America's specified energy performance targets".

PREPARED STATEMENT OF GE ENERGY

The following testimony is submitted on behalf of GE Energy (GE) for the consideration of the subcommittee during its deliberations regarding the fiscal year 2010 budget requests for the Department of Energy (DOE). Among GE's key recommendations are:

—*Renewable Energy*.—GE supports the fiscal year 2010 increases in Wind and Solar.

—*Fossil Energy*.—(1) Increase Coal funding by $75 million for off-the-shelf carbon capture plant designs to accelerate the near-term deployment of large-scale carbon capture and sequestration; (2) provide $45 million for Advanced Turbines in fiscal year 2010 support of advanced IGCC with carbon capture; (3) restore funding for water-related R&D activities.

—*Nuclear Energy*.—Additional funding is needed for loan guarantees, to support new nuclear plant development.

RENEWABLE ENERGY

DOE has played a critical role in the development of renewable energy technologies over the past three decades. The fiscal year 2010 budget request proposes $75 million for Wind and $320 million for Solar, representing 36 percent and 83 percent increases, respectively, from fiscal year 2009 appropriations. GE welcomes these funding increases as critical investments in the transformation of the Nation's energy infrastructure. We continue to believe that these appropriations must be sustained and increased over time. The American Wind Energy Association has recommended that annual Wind appropriations of $200 million are needed to meet the 20 percent wind by 2030 scenario. The fiscal year 2010 budget request is an important step in this direction.

DOE proposes to utilize the $20 million increase in Wind program funds to accelerate offshore wind technology development and improve the reliability and cost performance of land-based wind turbines; improve grid integration; and support efforts related to workforce development, wind-radar mitigation efforts, education, and community applications. GE has recommended that the DOE focus its Wind program on performance, reliability and grid integration, particularly in areas such as blade manufacturing; drivetrain technology; and grid operator solutions such as managing variability, ramp rate control, frequency regulation, and fault response. We support these new funds as critical investments toward achieving the 20 percent wind scenario while building U.S. technology and supporting increased U.S. jobs.

The proposed $145 million increase in Solar program funds includes substantial increases in Photovoltaic and Concentrating Solar Power R&D, as well as additional investments in systems integration, market transformation, and PV manufacturing. GE has recommended that the DOE focus its Solar program on improving PV module cost, reliability, and efficiency performance, particularly with regard to thin film PV technology; and on advanced controls and diagnostics to support the grid integration of solar assets. We support these funding increases as essential for realizing the DOE's goal of deploying 5–10 gigawatts of solar by 2015.

FOSSIL ENERGY

Commercial Scale CCS Demonstrations.—Demonstration of CCS at commercial scale is urgently needed to demonstrate to the public that geologic sequestration of CO_2 is a safe and environmentally acceptable solution for low carbon coal power. The continued use of our Nation's abundant coal resources requires proving that integration of power plants and sequestration resources can provide competitive and reliable electrical generation.

CCS Deployment.—GE recommends that DOE focus support on the near-term deployment of large-scale, utility CCS. In its fiscal year 2010 budget request, the DOE described the $3.4 billion provided through the American Recovery and Reinvestment Act ("ARRA") as the foundation of its clean coal program. However, of the $3.4 billion, the only certain funding that will be made available for utility CCS projects is the $800 million that will be provided for Round 3 of the Clean Coal Power Initiative. Much more is needed. GE is a member of the US Climate Action Partnership (USCAP), which recommended in its "Blueprint for Legislative Action" (January 2009) that a Federal CCS program establish at least five (5) gigawatts (GW) of CCS-enabled coal fueled facilities. Such a level of CCS deployment is needed to support implementation of coal performance standards that are key to achieving national greenhouse gas reduction goals. Even if CCPI Round 3 funds can be combined with other funding mechanisms for utility projects (e.g. EPAct 2005 section 48A Investment Tax Credits, loan guarantees and section 48Q CO_2 production credits), funding falls well short of that necessary to offset the additional capital and several years of additional operating costs of 5GW of utility CCS. While funding sufficient for 5GWs is not likely without new legislation, DOE can provide incentives to help remove barriers and accelerate CCS deployment.

Therefore, GE recommends that DOE fiscal year 2010 Coal funding be increased by $75 million (to $478.9 million) to fund the development of off-the-shelf Front-End Engineering Designs (FEEDs) for IGCC Greenfield plants optimized for CCS for Bituminous and Western coals. IGCC is ready for carbon capture now, but only needs the detailed engineering to support commercial proposals. Funding of FEEDs should accelerate development of commercial CCS projects and reduce the difficulty of obtaining approval from State regulators for recovery of project development costs. The development of these FEEDs will also deliver immediate and foster long-term job creation.

Geologic Sequestration.—Another significant barrier to the deployment of first-mover CCS projects is the uncertainty associated with availability of geologic storage. Comprehensive and expensive geologic characterization is necessary to ensure

that a plant will have a sequestration resource with sufficient capacity for a 30–40 year life. As with up-front engineering costs, public utility commissions are reluctant to approve cost recovery of studies relating to the availability of geologic storage, although they are necessary to assure project viability. Therefore, GE recommends that DOE fiscal year 2010 Carbon Sequestration funding be increased by $100 million (to $279.9 million) for co-funding of detailed geologic characterization to more fully validate storage sites for commercial CCS projects that are starting development.

FutureGen.—GE has three recommendations for the structure of the FutureGen program that will significantly improve its value in moving CCS forward: First, make the successful demonstration of integrated carbon capture and sequestration the primary focus of FutureGen. Reliable CO_2 production is essential to a successful sequestration demonstration. Second, FutureGen must demonstrate commercially relevant coal power generation with CCS. Carbon capture using gasification is widely performed economically and reliably in the commercial chemical process industry. The FutureGen project should incorporate technology and equipment in a design configuration that is representative of commercial practice in order to provide critical experience on integration of capture and sequestration at a commercial scale. Third, and as is essential to achieving the two foregoing goals, we recommend that FutureGen be contracted on a commercial and competitive basis for the design and construction of the plant and its sequestration facility. FutureGen can draw from existing experience and investment and avoid duplication of engineering costs. Carbon capture using gasification is widely performed economically and reliably in the commercial chemical process industry. GE has invested substantially in the development of its standard 630MW IGCC plant and an ancillary Carbon Island™ for carbon capture. A commercial contract with its guarantees and warrantees will provide the performance, schedule and cost certainty with reliable CO_2 supply for sequestration that FutureGen needs to achieve its primary goal of successful sequestration with reliable power generation.

Advanced Turbines.—GE recommends that annual funding of $45 million be provided in fiscal year 2010 to maintain needed progress in the Advanced Turbines. The Advanced Turbines program represents the Department's high priority research effort focusing on the development of enabling technologies for high efficiency hydrogen turbines for advanced gasification systems with carbon capture. It is on target to enable future advanced IGCC coal fueled power plants to offset much of the performance penalties associated with carbon capture while also achieving very low NO_X emissions. In addition to benefiting future coal IGCC applications, the technologies that come out of this program will also benefit existing and future natural gas combined cycle power plants. Improved efficiency of these applications will mean reduced emissions and reduced CO_2 for the same power output. This improvement would be by either implementing the technology on new advanced products or retrofitting the technology into existing gas turbines. A one point improvement in efficiency on GE's existing F-class fleet would result in 4.4 million tons less of CO_2 emissions per year.

Water.—Large amounts of water are needed to produce or extract energy, and large amounts of energy are needed to treat or transport water. This co-dependency is called the Water/Energy Nexus. In order for the DOE to achieve its aggressive goals of reducing freshwater withdrawals and consumption 50 percent by 2015 and 70 percent by 2020, water related R&D funding is needed. GE recommends water-related funding under Innovations for Existing Plants be restored and significantly increased above the $12 million allocated under the fiscal year 2009 budget. Funding for R&D and demo projects including: Non-traditional Waters for Cooling Make-up, Water Reuse and Recovery, Advanced Cooling Technologies, and Water Treatment and Detection will help to ensure DOE's goals are met. GE also recommends $40 million be allocated to innovative water reuse technologies and demonstration projects in the production of oil and natural gas to further reduce environmental impacts and operational costs of upstream energy processes. Support is also needed to advance reuse/treatment technologies for the conversion of impaired wastewater streams into sources of renewable water in areas of water scarcity, reducing the need to use energy to transport water over long distances and to support electricity generation.

NUCLEAR ENERGY

Nuclear power plant operation provides baseload energy generation with no greenhouse gas emissions. Each operating nuclear plant avoids the production of 8 million tons of CO_2 annually and in total the U.S. fleet of 104 reactors avoids nearly

1 billion tons of CO_2 annually. GE supports the use of nuclear energy as part of a diverse portfolio of power generation technologies and fuels.

Loan Guarantees and New Plant Development.—Federal investment has been instrumental in the licensing and partial development of standardized designs for advanced light water reactors and has helped form the foundation for a nuclear renaissance through programs such as the NP2010 program. In addition to the continuation of existing programs, more actions are required to ensure successful commercialization of new nuclear technologies. The Energy Policy Act of 2005 authorized loan guarantees to support advanced nuclear energy facilities. Due to the capital-intensive nature of nuclear plant deployment, these loan guarantees are key to the ability of utilities to attract financing and move forward with this clean, carbon-free technology. The current credit crisis in the United States makes it increasingly difficult to finance these and other capital-intensive projects. The original $18.5 billion in available loan guarantees is sufficient to support 2 to 3 new nuclear projects. DOE has already received applications for significantly more than that number of projects and to have meaningful progress on both climate change and energy security certainly more are needed. Based on this level of industry demand, the benefit to be derived, and the fact that these loan guarantees are self-funded and have no budget impact, GE supports an additional $50 billion in authorized loan guarantees through the DOE's Loan Guarantee Program for nuclear power facility projects.

Energy Parks—Research and Development for Commercial Deployment.—GE believes that a strong private public partnership should be formed to support the Energy Park concept outlined as part of the Office of Environmental Management's efforts for footprint reduction of the legacy DOE sites. GE believes that the installment of advanced light water reactors and research and development to support advanced recycling at the existing DOE sites in the Energy Park concept is a logical application for these locations. These sites are well understood from a permitting aspect and their existing workforce has skills that would be directly transferrable to commercial nuclear power applications. The Environmental Management office has received funding under ARRA. GE supports near term actions as part of this program including the community outreach, permitting, siting, design, and license application development for new nuclear reactors.

Non-proliferation and Waste Minimization.—GE supports used nuclear fuel recycling as a means to close the fuel cycle, to minimize nuclear proliferation risks and provide an alternative to Yucca Mountain. As the Nation explores solutions to nuclear waste issues, GE supports and seeks an opportunity to participate in the soon to be formed Blue Ribbon Waste Panel. The GE team has decades of experience in nuclear methods and designs based on U.S. technology that are available to close the nuclear fuel cycle. It is in the best interests of national security that U.S. technology be used to close the fuel cycle in a manner that does not result in separated plutonium.

ARPA–E; LOAN GUARANTEES

GE supports the DOE's budget request for $10 million in program direction to support the new ARPA–E program ($400 million appropriated through the ARRA) to advance disruptive, high-risk and high-potential technologies.

GE also supports $43 million ($6 billion appropriated through the ARRA) for the temporary Loan Guarantee Programs (LGP). Rapid implementation of the LGP is central to the recovery of the renewable energy industry, and these program operation and personnel funds deserve full and immediate support.

PREPARED STATEMENT OF THE ALLIANCE FOR MATERIALS MANUFACTURING EXCELLENCE (AMMEX)

The Alliance for Materials Manufacturing Excellence (AMMEX) welcomes this opportunity to provide its input to the subcommittee on the proposed budget for fiscal year 2010 for the Industrial Technologies Program (ITP) at the Department of Energy. AMMEX is a coalition of organizations representing the basic materials manufacturing sector (aluminum, chemicals, forest products, glass, metal casting, steel) in the U.S. economy along with key stakeholders in materials manufacturing, such as the Northeast Midwest Institute, the National Association of State Energy Officials and the American Council for an Energy-Efficient Economy.

We are writing to urge Congress to increase the funding to the ITP to the level of $150 million and to restore the structure of the program to one that emphasizes new process development in individual materials industries, including the six historically funded by this effort, as opposed to the currently proposed cross-cutting research approach. These changes would bring the program into alignment with Con-

gress' intent in both section 452 (Energy Intensive Industries Program) of the Energy Independence and Security Act of 2007, which was signed into law on December 19, 2007, as well as the Energy Efficiency and Renewable Energy Act of 2007, which passed the House unanimously on October 22, 2007.

The member organizations of AMMEX have been partners with ITP since the inception of the program's cooperative, industry-specific research activities. These research activities are a true public-private partnership. DOE and materials manufacturers jointly fund cutting-edge research that addresses the needs of the Nation and materials manufacturers. All projects have the shared goals of reducing energy consumption, reducing environmental impact, and increasing the competitive advantage of U.S. materials manufacturers.

Reducing our need for oil imports, developing an economy that is sustainable in energy supply, and reducing our environmental impact are important national policy goals. There is no more effective way to achieve these goals than through energy efficiency. The lowest cost, cleanest, and most reliable energy is the energy that is not consumed because of improved efficiency. By reducing the energy intensity of materials manufacturing and accelerating the delivery of new technology, ITP has helped make U.S. materials manufacturers more competitive in global markets, preserving and creating good-paying jobs in the process. The program is unique because it selects only projects with "dual benefits": a public benefit such as reduced emissions or energy use justifies the Federal funding, and an industry benefit such as a more efficient process or improved product justifies the industrial funding.

U.S. materials manufacturing continues to face challenges resulting from increased cost and decreased availability of traditional energy supply resources. These challenges have stimulated innovation in the materials manufacturing sector in order to create significant energy improvements and to diversify energy supplies. While the innovations of the past have brought materials manufacturing a long way, the sector cannot go further without new innovations. To this end, the materials manufacturing processes must be transformed; new processes and new innovations must be developed which will consume far less energy and that will be able to utilize diverse forms of energy.

To accomplish these goals, the Federal Government and industry will need to reembark upon a joint effort to broaden and accelerate inherently high-risk research, development, and deployment of new materials manufacturing processes that utilize diverse energy sources. This effort will also allow the materials manufacturing sector to lessen dependence on natural gas, oil, and conventional electricity sources, thus benefiting consumers through contribution to a stable energy market.

Dramatic increases in industrial energy prices and growing global competition threaten the vitality and the future of U.S. materials manufacturing. Unless this trend is reversed, American manufacturing jobs in these key industries will increasingly move overseas. Manufacturers have responded to such challenges in the past by applying the power of innovation to create new products and processes that sustain the foundation of the U.S. economy.

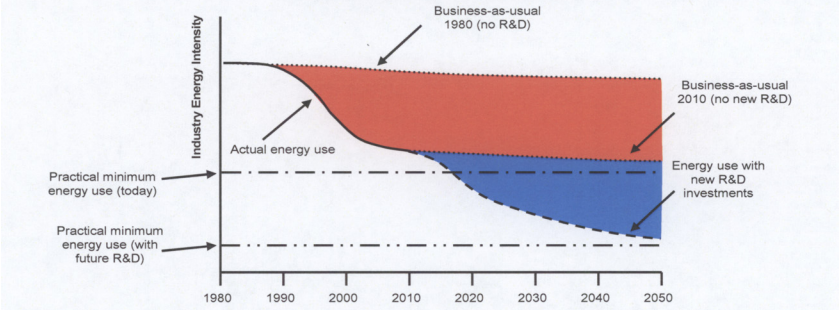
Our request for funding in fiscal year 2010 for ITP entails two parts:

—An increase to a total program level of $150 million, as authorized in the Energy Independence and Security Act of 2007.

—A re-structuring of the program so as to return to the structure that was so successful from 1990 to 2003—a balanced portfolio of research from the point of view of research impact; i.e., a greater focus on energy intensive industrial processes. For the 2010 budget, we request that the Industries of the Future industry-specific R&D be increased to $30 million. We further recommend that in future budgets at least 50 percent of the funding go to research into new process development where the energy savings potential in industry is highest.

Figure 1 below is representative of the gains in energy efficiency made by materials manufacturers since 1990, when they began partnering with ITP.

Figure 1: Stylized Graph of Energy Intensity Reductions Achieved by Materials Manufacturers Due To Partnership with ITP Since 1990



This chart shows that materials manufacturing processes have become increasingly efficient from 1990 to 2000, and that new process developments are required to continue making similar gains in the future.

Between 1990 and 1996 the program consisted largely of "industry-specific" funding and averaged $100 million annually. There were some "cross-cutting" projects in this time, but they were a relatively small percentage of the total. As the program grew, spending still remained focused on industry-specific projects. Figure 2 below shows the funding history of the DOE ITP program since 1998.

Figure 2: History of Funding for DOE Industrial Technologies Program

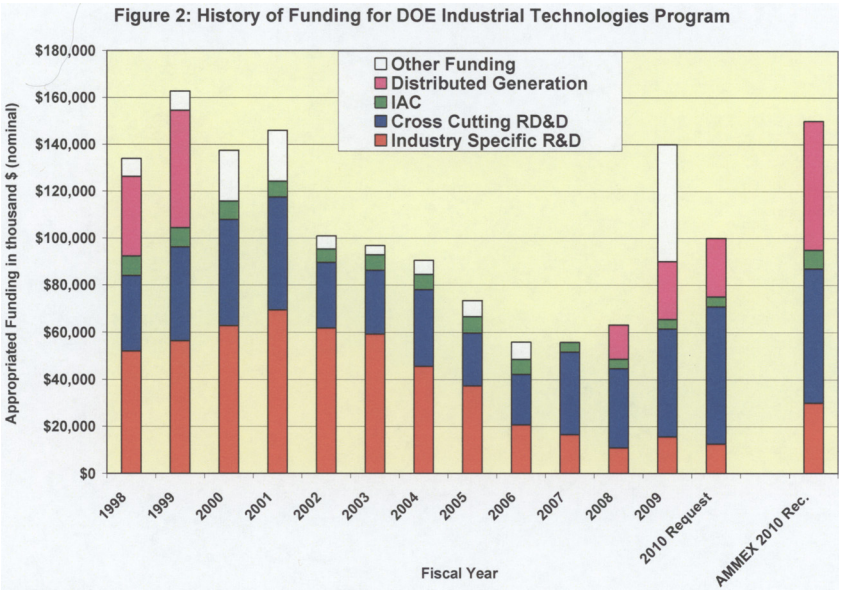


Figure Notes:

—IAC and Distributed Generation funding are subsets of "Cross Cutting RD&D"

—"Other Funding" includes management and technical planning and support, as well as other funding not listed under "Industry-Specific" or "Cross Cutting" in budget documents. The $50 million "Other Funding" in 2009 is for information and communications technology efficiency.

—2010 AMMEX recommendation includes: $30 million for Industry Specific R&D, $65 million for Cross Cutting RD&D (including $8 million for the IAC program), and $55 million for Distributed Generation.

By 2004, ITP was not only the target of drastic cuts, but remaining funds were rebalanced to favor cross-cutting projects over industry-specific projects as well. While Figure 1 shows that new process developments are needed to improve the en-

ergy efficiency of materials manufacturing industries, Figure 2 shows that these necessary funding levels are not being met. A recent peer review of the program indicated that the technology pipeline for R&D projects is now running dry. It is imperative to fund these programs now, as it takes time to refill the pipeline and achieve additional energy savings.

AMMEX members that DOE has recently supported have identified their top new process development concepts, not listed in order of priority, which would be pursued at the funding levels and structure defined above:

Aluminum

—Improved energy-efficient burners and furnaces for aluminum melting.
—Improved energy efficiency and recovery rates for recycling technologies.

Chemicals

—Development of alternative feedstocks for the chemical industry to reduce dependence on petroleum and natural gas derived feedstocks.
—Nano-manufacturing scale-up methodologies for key unit operations: synthesis, separation, purification, stabilization, and assembly.
—Development of low-energy, low-capital membrane or hybrid separations technology.

Glass

—Submerged Combustion Melter.
—Waste Heat Recovery and Use as Electrical or Chemical Energy.
—Increase glass strength (towards theoretical) to reduce weight and energy per unit made.

Forest Products

—Energy-efficient pulping and papermaking.
—Eliminating use of fossil fuels in manufacturing.
—Significantly reducing fresh water consumption in pulp and paper mills.

Metal Casting

—Net Shaped Manufacturing through Advanced Lost Foam Casting technologies.
—Smart coatings and advanced surface treatments for energy efficient tooling technologies.
—Disruptive approaches for nano-composites for lighter weight cast components.
—High Strength Steels for improved service performance.

Steel

—Ironmaking by Molten Oxide Electrolysis.
—Ironmaking by Flash Smelting using Hydrogen.
—Demonstration of the Paired Straight Hearth Furnace Process.

Other industries, such as cement, would benefit from expanded R&D as well, but have not been engaged with the Department.

The United States also faces serious shortages in the science and engineering workforce that is needed to keep our Nation's competitive edge in world markets through technology innovation and timely application. There is a clear need for a reinvigoration of our commitment to technology education. Advanced R&D projects are often undertaken in conjunction with major American research universities. These projects help to expose students to the kind of research necessary to serve the future energy efficiency needs of industry. Other ITP efforts such as the Industrial Assessment Center program complement this R&D funding by helping to train this future workforce.

Our proposal to the subcommittee is an effort to both rebuild America's materials manufacturing industries and revitalize our science and engineering institutions. It builds a new public-private partnership to support these twin goals, and will ensure that the U.S. materials manufacturing industry will remain vital and competitive through:

—Accelerating technology innovation to ensure the future competitiveness, resource efficiency, and sustainability of our domestic materials manufacturing industry;
—Building the vital intellectual infrastructure in American universities and laboratories that will work in partnership with the materials manufacturing industry; and
—Maintaining a healthy American materials manufacturing base, which is vital to our national security.

On behalf of the AMMEX coalition, we thank you for the opportunity to submit this statement. We look forward to continuing to work with the subcommittee as

you move forward on the fiscal year 2010 Appropriations legislation for the Department of Energy.

PREPARED STATEMENT OF THE AMERICAN SOCIETY FOR MICROBIOLOGY

The American Society for Microbiology (ASM) is pleased to submit the following testimony on the fiscal year 2010 appropriation for the Department of Energy (DOE) science programs. The ASM is the largest single life science organization in the world with more than 43,000 members. The ASM mission is to enhance the science of microbiology, to gain a better understanding of life processes, and to promote the application of this knowledge for improved health and environmental well-being.

The DOE Office of Science funds basic research in support of the DOE's mission of energy security, national security, and environmental restoration. Research supported by the Office of Science encompasses such diverse fields as materials sciences, chemistry, high energy and nuclear physics, plasma science, biology, advanced computation, and environmental studies.

The ASM supports the administration's pledge to substantially increase funding for basic science research and scientific user facilities and urges Congress to fund the DOE office of science at $5.2 billion for fiscal year 2010, an 8 percent increase.

We commend Congress for the substantial and much needed funding for the DOE in the American Recovery and Reinvestment Act of 2009 and the Omnibus Appropriations Act of 2009. The need remains, however, for a steady and reliable increase of fiscal year appropriations to provide real growth for DOE science budgets in future years.

BIOLOGICAL AND ENVIRONMENTAL RESEARCH (BER)

Operating within the DOE Office of Science, the BER division facilitates the growth of a strong science based platform to continue to work with national laboratories, universities and private institutions to harness the capabilities of microbial and plant systems. A fundamental task of the BER is supporting and providing research for the President's National Energy Plan. Research from BER contributes to developing cost-effective, renewable energy, increasing the Nation's energy security, and works to slow or stop increases in atmospheric carbon dioxide among other crucial priorities.

The ASM urges Congress to support an increase for the BER on par with the overall increase in fiscal year 2010 funding for the Office of Science.

Research on microbes contributes advances to critical technologies and processes necessary for addressing the Nation's great energy and environmental challenges in a number of ways:

—*Carbon Sequestration*.—Microbes offer multiple possibilities for enhancing carbon sequestration, a process that can reduce CO_2 accumulation in the atmosphere. These options include enhancing plant growth, some of which may be used for biofuels, and promoting carbon storage belowground. The latter process involves manipulation of microbial communities and activities to help stabilize organic carbon in soils.

—*Environmental Remediation*.—Microbes play major roles in modifying sub-surface environments, where many major pollutants accumulate and are subsequently dispersed. Microbial activities affect the chemical form and movement of many contaminants. The work of various research groups has shown that microbes can be manipulated to directly or indirectly provide potential cost-effective bioremediation strategies for immobilizing contaminants. For instance, two different microbes, Shewanella and Geobacter, transform toxic metals such as uranium from a soluble form that moves in groundwater, to an insoluble form that can then be recovered for decontamination. These and other microbes also decontaminate many other metals, radionuclides and toxic chemicals.

—*Renewable Energy*.—A greater understanding of the process by which crude oil is transformed into methane, or natural gas, opens the door to recovering clean-burning methane directly from deeply buried or in situ oil sands deposits. A recent study demonstrated methane production from anaerobic hydrocarbon degradation; these findings offer the possibility of "feeding" specific hydrocarbons to microbes and rapidly accelerating their conversion into methane. Additional research has shown that hydrogen can be produced from partly degraded oil, and used with CO_2 to form methane. This paves the way for using the microbes to capture this CO_2 as methane, which could then be recycled as fuel in a closed-loop energy system.

Microbial enzymes are also important sources of catalysts for conversion of plant biomass, including cellulose and lignins to biofuels (e.g., ethanol and butanol). Con-

tinued support of basic microbiological research is essential for ensuring that the potential for biomass as a source of renewable, alternative fuels can be realized.

GENOMICS: GTL

The Genomics.—GTL program supports basic research in plant and microbial systems biology and explores microbes and plants at the molecular cellular and community levels. The ASM supports an increase in funding for GTL in fiscal year 2010 to allow it to continue to advance DOE wide missions in environment, climate and energy.

The GTL goal remains to expand insights about fundamental biological processes and a predictive understanding of how living systems operate. This understanding, linked with DNA sequences and widely available, will catalyze the translation of science to new technologies for application in energy and environmental issues.

The GTL works with the DOE Joint Genome Institute (JGI), one of the world's largest and most productive public genome sequencing centers, to map genomes of microbes and fungi that degrade biomass or impact plant productivity. This relationship has created a vital knowledge base within the DOE from which scientists are able to purposefully redesign proteins, biochemical pathways, and even entire plants or microbes to help solve bioenergy challenges.

Three GTL Bioenergy Research Centers were established in 2007, the Bioenergy Science Center, the Great Lakes Bioenergy Research Center, and the JGI. These centers, which are actively working toward making the production of biofuels more efficient, less costly, and commercially viable; results of ongoing studies are changing the way we think about biotechnology, and transforming how we power our Nation. The centers are creating knowledge underlying three grand challenges faced by biology within the DOE mission: (1) development of the next-generation bioenergy crops; (2) discovery and design of enzymes, and microbes with novel biomass degrading capabilities; and (3) discovery and design of microbes that transform fuel production from biomass. Meeting these challenges will benefit all biological research efforts.

Areas of emphasis in Genomics: GTL include:

Bioenergy Production.—A broad range of research has been undertaken to optimize bioenergy production from a variety of renewable sources. Past and ongoing research has made significant progress in a number of areas: understanding the details of plant biomass structures and how they might be manipulated to improve conversion to biofuels; discovery of novel enzymes for improving conversion of biomass to biofuels; understanding the details of plant and microbial metabolism at a level that promotes controlled synthesis of desired end-products.

Environmental Remediation.—Research sponsored by Genomics: GTL has made major progress in understanding the functions and behavior of specific microbes (e.g., Geobacter and Shewanella) and microbial communities that play important roles in strategies for remediating a wide range of environmental problems, including clean-up of toxic wastes and radioactive materials. This work integrates from microbial genomes through the functions of microbes in the environment, and provides a foundation for altering microbial activities for to solve specific problems.

Carbon Cycling.—Microbes play major roles in the transformation of carbon in natural systems. Some of these transformations can promote carbon sequestration, while others produce greenhouse gases. Genomics: GTL research helps understand how complex microbial communities function in nature, and how these communities respond to changes and stresses. This information is not only critical for developing predictions of microbial responses to climate and other environmental changes, but is essential for developing approaches for managing those responses to minimize adverse impacts of change.

The ASM urges Congress to fully support the GTL program with increased funding to JGI. In fiscal year 2009, the President's budget request included $162.7 million in funding for GTL, but significantly cut funding for JGI by $5 million. It is imperative to ensure that funding increases are seen for both of these vital programs in fiscal year 2010.

ENVIRONMENTAL REMEDIATION SCIENCES DIVISION

The Environmental Remediation Sciences Division (ERSD) within BER sponsors and supports fundamental scientific research to understand the complex physical, chemical, and biological properties of contaminated sites in order to develop new solutions for environmental remediation. DOE is responsible for the largest, most complex, and diverse collection of environmental remediation challenges in the Nation. ERSD supports two major activities: (1) the Environmental Remediation Sciences Program (ERSP), which seeks to provide the fundamental scientific knowledge need-

ed to address challenging environmental problems that impede the remediation of contaminated environmental sites; and (2) the Environmental Molecular Sciences Laboratory (EMSL), which is a national scientific user facility that provides integrated experimental and computational resources for discovery and technological innovation in the environmental molecular sciences to support the needs of DOE and the Nation.

DOE's remediation challenges occur in the field where highly interactive natural processes acting over a broad range of scales control the fate and transport of contaminants. The ERSD goal is to help provide the basis for development of innovative remediation measures to support decisionmaking critical to long-term stewardship. Of the 144 sites where DOE has remediation, waste management, or nuclear materials and facility stabilization responsibilities, nearly 100 have soils, sediments, or groundwater contaminated with radionuclides, metals, or organic materials.

The ASM urges Congress to fully support ERSD, which will help support DOE's goal to "provide sufficient scientific understanding such that DOE sites would be able to incorporate physical, chemical and biological processes into decisionmaking for environmental remediation and long-term stewardship."

ENERGY BIOSCIENCES

The ASM supports increased funding for the Energy Biosciences program within the Basic Energy Sciences Division of Chemical Sciences, Geosciences, and Biosciences. The Energy Biosciences (EB) program within the Basic Energy Sciences (BES) division supports fundamental research to promote the development of future energy-related technologies. There is a specific emphasis in research on plant and non-medical microbial energy transduction systems. The EB program provides a fundamental understanding of the complex processes that convert and store energy in living systems and impacts numerous DOE interests, enhanced biofuel production strategies, next generation energy conversion/storage devices, and efficient and environmentally-friendly catalyst development in particular.

In fiscal year 2009, EB was divided into two separate programs:

Photosynthetic Systems.—This program is focused on fundamental research to elucidate the specific mechanisms by which plants and microbes convert solar energy into chemically-stored forms of energy. Results from this new program will create a foundation for the development of enhanced biological and engineered systems to harvest solar energy, thus contributing to the Nation's goal of energy independence.

Physical Biosciences.—This program combines tools and approaches from the physical sciences with the disciplines of molecular biology and biochemistry to create new understandings of the detailed mechanisms for energy storage and use in plants and microbes. Results for this new program will promote the development of improved systems for harvesting energy in multiple forms and enhancing their use for human needs.

WORKFORCE DEVELOPMENT

Scientific research and subsequent discovery is vital for the Nation to remain competitive in the global economy and ensuring support for a well trained workforce of teachers and scientists at all levels, is imperative. The ASM supports increased funding for Workforce Development for Teachers and Scientists within the DOE Office of Science which funds undergraduate research internships, graduate and faculty fellowships, pre-college activities, laboratory equipment programs, and teacher programs.

CONCLUSION

The ASM supports increased funding for the DOE Office of Science in fiscal year 2010, and urges Congress to provide adequate funding for the BER, ERSD, and Genomics: GTL, and the JGI, which are essential to DOE's mission. The DOE Office of Science programs enhance United States competitiveness through fundamental research and advanced scientific breakthroughs that revolutionize the Nation's approach to challenging energy and environment challenges.

The ASM appreciates the opportunity to provide written testimony and would be pleased to assist the subcommittee as it considers the fiscal year 2010 appropriation for the DOE.

PREPARED STATEMENT OF THE AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS

To the Chair and members of the subcommittee, thank you for this opportunity to provide testimony on the importance and need for strong Federal R&D efforts in

the fields of oil and natural gas, coal, and geothermal technologies. These activities reside in the U.S. Department of Energy's fossil energy program (oil, natural gas, coal) and energy efficiency and renewable energy program (geothermal). They are an essential investment in this Nation's energy security.

The American Association of Petroleum Geologists (AAPG) is the world's largest scientific and professional geological association. The purpose of AAPG is to advance the science of geology, foster scientific research, and promote technology. AAPG has nearly 34,000 members around the world, with roughly two-thirds living and working in the United States. These are the professional geoscientists in industry, government, and academia who practice, regulate, and teach the science and process of finding and producing energy resources from the Earth.

AAPG strives to increase public awareness of the crucial role that geosciences, and particularly petroleum geology play in energy security and our society.

Our members have a big job. Fossil fuels supply 87 percent of the world's total energy needs, down only 4 percent in the past quarter century. Transportation represents about 30 percent of end use demand and is dominated by liquid fuels derived from oil. Heating is another 30 percent and dominated by oil and natural gas. Electricity represents the remaining 40 percent with a broadening portfolio of fuel sources. Coal, nuclear, and natural gas currently dominate electricity production, but alternatives like wind are growing rapidly. However, because electricity demand is also growing, alternatives remain a small fraction of total production.

Today's energy debate is often framed as a choice between fossil fuels or alternative (non-fossil) fuels, or between fossil fuels and the environment, but these are red herrings. Sustaining a healthy U.S. and global economy, and thus enabling substantial investment in our environment, requires a stable and continuous supply of fossil fuels while simultaneously developing and expanding alternative and new fuels. This is the bridge to our energy future. We need both, and the process of building this bridge will take 25 to 40 years, perhaps longer. Our Nation's energy policies and investments must reflect this reality.

For example, President Obama's fiscal year 2010 budget includes the rollback of a series of tax provisions currently available to the oil and gas industry, which is dominated today by the U.S. independent producer. It also proposes assessing new fees and taxes on oil and natural gas producers, and repealing the ultra-deepwater and unconventional research programs.

Compounded by a weak economy and limited access to capital, these proposed policies on top of an already heavily taxed industry would have a chilling effect on oil and natural gas drilling, production, and energy investment in this country, cost many jobs, and directly undermine U.S. energy security.

The United States tried this experiment from 1980–1988 with the windfall profits tax which, compounded with the drop in price of oil in the 1980's, had a disastrous effect on drilling, industry employment and U.S. energy production for nearly two decades to follow. We face a very similar price situation now and cannot afford to repeat an experiment that has already been tried and failed.

These either/or policy choices fail to recognize that as we bridge to an alternative energy future, we must preserve and even strengthen the fossil energy foundation underlying it. Research and development investments are critical to developing alternative and new fuel sources, but are also needed in fossil energy to develop the science and technology to ensure their future availability.

OIL AND NATURAL GAS TECHNOLOGIES PROGRAMS

The oil and natural gas technology research programs at DOE have received grossly inadequate appropriations for many years. In fact, in fiscal year 2009 Federal oil and natural gas R&D represented a miniscule proportion of total energy R&D expenditures, while, ironically, oil and natural gas combined contribute 65 percent to our Nation's energy portfolio.

President Obama's fiscal year 2010 budget request continues this ill-advised pattern by proposing to eliminate DOE's petroleum-oil technologies program, funded at $5 million in fiscal year 2009, and increasing by $5 million the natural gas technologies program (for a total program of $25 million) to study natural gas hydrates.

Instead, these programs should be increased substantially to ensure the technology will be available to find, develop, and produce these natural resources.

Criticisms of these research programs are frequently couched in terms of "corporate welfare" or a notion that the private sector should support all oil and natural gas research on its own. But these charges reveal a fundamental misunderstanding of several important trends:

—The transition to non-fossil fuel alternative energies will take much longer than a few decades. Alternatives are currently more expensive, less reliable and sim-

ply cannot meet the scale of energy demand. To try to force the United States on a different course than the rest of the world, at a cost of literally trillions of dollars, will disadvantage the United States at a minimum and worse further hurt the U.S. economy.

—Increasingly, domestic oil and natural gas production is shifting to non-traditional (unconventional) resources, such as the Barnett Shale in Texas or the Bakken formation in the Williston basin. These resources are different from the conventional resources of the past and hold great promise, but realizing that potential requires significant R&D and technology development. Each resource has unique challenges and if the United States is to leverage their global potential it must invest accordingly and substantially.

—Over the past decade the United States has added substantial natural gas reserves with a net increase on the order of 15 trillion cubic feet (TCF) in the past 3 years owing to drilling and expansion of shale gas. Proven reserves of dry natural gas, including Prudhoe Bay, are about 300 TCF. Natural gas resource estimates are 6–7 times the proven reserves. U.S. domestic production of dry natural gas in 2008 was 20.6 TCF. Natural gas is the largest source of domestically produced energy, slightly greater than coal, substantially greater than oil, nuclear, and all other sources. With the proper incentives, and combined with a commitment to LNG, natural gas could support all of the demand growth in power generation needed for several decades. Such a shift in the fossil fuel mix would have a very positive impact on reducing CO_2 emissions growth.

—The U.S. oil and gas industry is in decline. Many of the top public companies that built the U.S. energy advantage no longer exist. Such names as Mobil, Amoco, Texaco, Phillips, Unocal, Arco, Kerr McGee and others are gone as the result of mergers and acquisitions. This decline has not stopped. All combined public companies control less than 10 percent of the world's oil and natural gas reserves; the remainder is controlled by national oil companies (NOCs), many of them OPEC nations. These NOCs are now leasing up resources globally and will become the international oil companies of the future.

—Domestic oil and natural gas resources are increasingly developed by independent producers, ranging from individuals to large companies. They do not have the capacity or resources to conduct independent research. They have, however, been willing and able to quickly adopt and commercialize new technologies when appropriate technology transfer occurs.

—Federal R&D has historically provided support for the Nation's universities and colleges, which have proven to be a rich source of technological innovation. But as Federal support for oil and natural gas technologies has waned, so has the ability to conduct this type of research and train the next generation of U.S. scientists and engineers. This trend is particularly worrisome, because developing nations are investing significantly in fossil energy research and development and U.S. universities are now heavily enrolled by non U.S. students.

Given the important role that oil and particularly natural gas currently play in our energy portfolio, we must rebuild and expand the Nation's Federal R&D and training capacity for oil and natural gas through a partnership of government, academia, and industry. These and other trends demonstrate the need for a robust Federal oil and natural gas program, one that is funded on the scale of coal, nuclear and alternatives.

We request the subcommittee on Energy and Water Development and Related Agencies appropriate $500 million for oil and natural gas technology programs to be administered by the Department of Energy's Office of Fossil Energy to support research projects that target increased production of domestic oil and natural gas resources.

COAL PROGRAM

The Nation's coal resource is vitally important to U.S. energy security. AAPG supports significant research and development funding for coal, including clean coal technologies such as carbon capture and sequestration. We support the funding provided in the American Recovery and Reinvestment Act of 2009 for coal research, and encourage Congress to sustain this commitment in its fiscal year 2010 appropriations by funding at fiscal year 2009 levels or higher.

Again, these investments must be balanced. In evaluating the DOE coal program, I urge you to review the findings of the National Academy's report entitled Coal: Research and Development to Support National Energy Policy, released in June 2007. The study finds that while there are significant uncertainties in U.S. coal reserve and resource estimates, there is sufficient coal at current consumption to last for more than 100 years.

However, there is a real need for more "upstream" coal research to increase our understanding of the Nation's resource base. They observe that currently, over 90 percent of Federal R&D spending for coal is on the "downstream" side, focused on utilization, carbon capture and sequestration, and transport and transmission. Only 10 percent goes to resource and reserve assessment, mining and processing, environment/reclamation, and safety and health.

AAPG supports the $3.4 billion for coal R&D provided in the American Reinvestment and Recovery Act of 2009, and supports President Obama's fiscal year 2010 request of $404 million.

GEOTHERMAL ENERGY TECHNOLOGIES PROGRAM

Geothermal energy is an important alternative energy resource that provides baseload power to the Nation's electrical grid. Significant expansion of geothermal power production may be possible through the development of enhanced or engineered geothermal systems, but developing and proving these technologies will require R&D investment.

AAPG supports the $400 million for geothermal energy R&D and deployment in the American Reinvestment and Recovery Act of 2009. AAPG supports President Obama's fiscal year 2010 request for $50 million for this program, and encourages Congress to appropriate at this level.

SUMMARY

Thank you for the opportunity to present this testimony to the subcommittee. Building a bridge to our energy future requires significant investment in new and alternative energy and fuel sources, but it also requires significant R&D investment in fossil fuels, the foundation of our global energy system, to ensure an orderly transition.

PREPARED STATEMENT OF THE NATIONAL MINING ASSOCIATION (NMA)

NMA RECOMMENDATIONS

Department of Energy—Office of Fossil Energy

Background.—NMA is disappointed that the U.S. Department of Energy (DOE) fiscal year 2010 request severely reduced the overall fossil energy budget, with steep declines in funding for coal programs. While we recognize that the economic stimulus package enacted earlier this year included demonstration project and Clean Coal Power Initiative funding, we do not believe that such funding justifies the 20 percent for all fossil energy programs including in the fiscal year 2010 budget request. A cut of this magnitude will compromise advances in clean coal and carbon capture and sequestration efforts.

Office of Fossil Energy

NMA fully supports and urges maximum funding for carbon capture and storage (CCS) projects that avoid, reduce or store air pollutants and greenhouse gases while contributing long-term economic growth and international competitiveness. Substantial Federal funding for continued research, development and demonstration of CCS technologies will be required before CCS can be applied to large-scale commercial power plants. The construction and operation of near-zero emission and low carbon projects, such as the proposed FutureGen project in Mattoon, Ill., are indispensable to demonstrate that the technology necessary to meet domestic energy demands of the 21st century are available on a commercial scale. NMA strongly supports the recent agreement between the DOE and the FutureGen Alliance to proceed with a reconfigured carbon capture and storage energy facility at Mattoon, Ill. We support the use of $1.073 billion from the American Recovery and Reinvestment Act for use in this endeavor and look forward to working with the Alliance and DOE to further advance CCS technologies.

Funding for basic research and development of new, innovative clean coal technologies is necessary to continue the progress made over the last 35 years. Regulated emissions from coal-based electricity generation have decreased by nearly 40 percent since the 1970s while the use of coal has tripled. Well funded basic coal research by DOE and clean coal technology demonstrations undertaken by DOE-private sector partnerships will continue this significant progress in energy production and environmental improvement. Technological advancements achieved in the base coal research and demonstration programs such as gasification, advanced turbines and carbon sequestration provide the component technologies that will ultimately be integrated into the FutureGen project as recently reconfigured. NMA supports fund-

ing several of these programs at levels higher than the President's request, specifically $80 million for IGCC/gasification (DOE's requested amount: $55 million), $45 million for advanced combustion (DOE's request does not include direct funding) and $45 million for advanced turbines (DOE's request: $31 million). We are, however, pleased that DOE provides nearly $180 million for the Carbon Sequestration Research & Development program and Carbon Sequestration Injection Tests combined. We hope that DOE will work with industry to identify specific programmatic activities and funding for these programs. The increase in funding for these and other programs will ensure the FutureGen project meets the intended goals outlined in DOE's 2004 report to Congress, "FutureGen, Integrated Sequestration and Hydrogen Research Initiative—Energy Independence through Carbon Sequestration and Hydrogen from Coal."

In addition, NMA recommends $3 million of funding for the Center for Advanced Separation Technologies (CAST), which is a consortium of seven universities lead by Virginia Tech. CAST has developed many advanced technologies that are used in industry to produce cleaner fuels in an environmentally acceptable manner, with some having cross-cutting applications in the minerals industry. Further development of advanced separation technologies will help encourage developing countries, such as China and India, to deploy affordable clean coal technologies and reduce CO_2 emissions. Research in Advanced Separations is mandated by the 2005 Energy Policy Act, section 962.

U.S. Army Corps of Engineers—Regulatory and Civil Works Programs

Background.—The U.S. Army Corps of Engineers' (Corps) Regulatory Branch plays a key role in the U.S. economy through the Corps annual authorizations of approximately $200 billion of economic activity through its regulatory program. NMA recommends that a portion of the Corps' regulatory program funding be used to develop a more efficient process for expediting permit decisions associated with surface coal mining operations. In addition, NMA supports the inclusion of language directing the Corps to dedicate sufficient personnel and financial resources needed to support an efficient permit review process.

Regulatory Program

NMA supports increased funding for administering the Corps' Clean Water Act (CWA) section 404 permit program and for devising an efficient permitting program for authorizing surface coal mining permits.

Civil Works Programs

NMA opposes the Corps' proposed concept of a new inland waterways "lockage fee/tax," which would replace the current diesel fuel tax, to fund improvements to the Nation's inland waterways system. A lockage tax would more than double the taxes paid by the towing industry. The coal industry ships approximately 185 million short tons of coal annually on the inland waterways systems, therefore the cost of a new tax will ultimately be borne by the consumers of coal-fueled electricity. NMA opposes such a tax increase and urges Congress to reject this proposal and maintain the current diesel fuel tax.

PREPARED STATEMENT OF THE AMERICAN WIND ENERGY ASSOCIATION

INTRODUCTION

America's wind industry enjoyed a record year of growth last year, deploying over 8,500 megawatts (MW) nationwide, which amounted to more than 40 percent of the country's new electricity generating capacity. Although wind is commercially deployable today, increased research, development, and deployment (RD&D) funding could significantly reduce its overall cost, improve reliability, and help keep America's domestic wind industry competitive with other electric generation sources and the wind industries in other countries.

To meet these goals, the American Wind Energy Association (AWEA) requests that the subcommittee provide $105 million for the Department of Energy's (DOE) Wind Energy Program for fiscal year 2010, an increase of $30 million over the President's budget request. AWEA also requests that the subcommittee provide the DOE Office of Electricity Delivery and Energy Reliability (OE) with the $208 million included in the President's budget request. The President's budget request for OE includes approximately $73 million for transmission development and grid integration that could directly benefit wind deployment, including $20 million specifically for "transmission reliability and renewable integration."

IMPORTANCE AND BENEFITS OF WIND ENERGY RD&D

The DOE Wind Program has provided essential help to the wind industry over the years by supporting technology development and assisting in market acceptance of wind. The job is not done, however. Wind power is still constrained by difficulties in market acceptance and needed improvements in cost, performance, and reliability.

As wind energy meets more of our energy needs, it is crucial to increase Federal funding to lower capital costs and improve turbine reliability. DOE's 20 percent Wind Energy by 2030 report assumes that capital costs decrease by 10 percent and that turbine efficiency increases by 15 percent to reach the goal of providing 20 percent of our Nation's electricity from wind by 2030. The need for continued Federal investment in wind RD&D is made clear in the report when DOE states, "In a functional sense, wind turbines now stand roughly where the U.S. automotive fleet stood in 1940.[1]"

Meeting the 20 percent goal by 2030 would provide a host of benefits nationwide, including:

—Supporting 500,000 jobs, generating over $1 trillion in economic impact by 2030;
—Reducing natural gas demand by approximately 7 billion cubic feet/day, nearly half of the current consumption in the electric sector;
—Decreasing natural gas prices by approximately 12 percent, saving consumers approximately $128 billion through 2030;
—Avoiding 825 million tons of carbon dioxide emissions in the electric sector in 2030, equivalent to 25 percent of expected electric sector emissions; and
—Reducing cumulative water consumption in the electric sector by 17 percent in 2030 (one-third of which would come from the arid West).

EXPLANATION OF APPROPRIATIONS REQUEST

Last year, as part of an AWEA Research and Development (R&D) Committee effort, a team of over 80 AWEA members and advisors from industry, government, and academic institutions met to determine how much funding would be needed to meet the goal of providing 20 percent of our Nation's electricity from wind energy by 2030. Participants determined that $217 million in annual Federal funding, combined with a $224 million annual industry/State cost share, would be necessary to support the research and development and related programs needed to meet that goal. The group determined that $201 million should be directed to DOE, with an additional $15.5 million for the Department of Labor (DOL) for workforce development.

AWEA greatly appreciates DOE's designation of funding from the American Recovery and Reinvestment Act (ARRA) for wind energy RD&D and transmission and systems integration. AWEA is also grateful for the increases for the DOE Wind Program and OE transmission activities in the President's fiscal year 2010 budget. The combined funding will finance a number of key wind industry priorities to help overcome the challenges to meet the 20 percent by 2030 vision. However, neither the ARRA nor the President's budget appears to fully address a number of key wind energy challenges.

Technology R&D funding through the ARRA and the President's budget provides a much needed boost to bring down the cost of wind energy and improve wind turbine efficiency. However, more funding is needed to address issues related to wind turbine technology, siting and public education, wind resource modeling and wind power plant efficiency assessment. In April, Secretary Chu announced $93 million from the ARRA for wind energy RD&D, including $45 million to build a wind turbine drivetrain testing facility and $10 million for the National Renewable Energy Laboratory's (NREL) National Wind Technology Center (NWTC). In May, he announced $25 million to construct and fund first-year operating expenses for the Massachusetts Wind Technology Testing Center to test large wind turbine blades.

In total, the ARRA funding and the President's budget still fall short of the $161 million in annual DOE, non-transmission funding identified through the AWEA R&D Committee effort to meet the goal of providing 20 percent of our Nation's electricity from wind energy by 2030. $45 million for the drivetrain testing facility will be used for construction expenses, as will most of the $25 million provided for the large blade test facility. The $10 million for the NWTC will fund infrastructure improvements to the facility. As a result, a budget gap of $30 million remains between the wind industry's RD&D needs and fiscal year 2010 Federal funding for wind RD&D.

[1] U.S. Department of Energy, "20% Wind Energy by 2030" (July 2008), http://www.20percentwind.org/20p.aspx?page=Report.

The President's fiscal year 2010 budget for the DOE Wind Program includes just over $11 million for "technology acceptance." Within this category, one of the wind industry's top priorities is improving radar and electro-magnetic fields assessment and mitigation. The Department of Defense, Federal Aviation Administration, and other Government agencies are concerned about the impact wind projects have on radar systems. Funding mitigation methods is crucial for opening new areas for wind energy development.

The wind industry has also identified the need to fund programs to educate local policymakers and the general public. Such programs are critically important to provide communities with reliable, objective information about wind projects.

The working group mentioned above determined that $19 million is needed to fund radar assessment and mitigation and the education of the public and local decisionmakers on wind energy issues. Out of the $105 million request, AWEA would appreciate an increase of $8 million to ensure that the DOE Wind Program's technology acceptance efforts meet industry needs and to facilitate the installation of more wind energy projects across the country.

Finally, as mentioned earlier, overcoming the transmission challenges associated with grid integration and transmission expansion is another top priority for the wind industry. Regardless of which office receives funding for grid integration and transmission development, it is crucial that OE and DOE's Office of Energy Efficiency and Renewable Energy (EERE) work together to assist utilities in their efforts to produce grid integration solutions related to wind variability while incorporating expertise in place at DOE national laboratories, such as NREL. EERE, OE, and NREL should also work closely with organizations like the Utility Wind Integration Group (UWIG) to resolve grid integration challenges associated with wind energy development.

GENERAL WIND INDUSTRY PRIORITIES

The wind industry generally supports Federal funding for the following areas:

Wind Turbine Technology and Reliability.—This area should focus on the development of wind turbine components to reduce capital costs, improve performance, and enhance reliability to achieve the 20 percent vision by 2030.

AWEA also recognizes the need to reduce the cost of offshore wind energy technology to provide the estimated 54 gigawatts (GW) of the 300 GW needed to meet the 20 percent goal by 2030. For this reason, AWEA requests that any funding for the DOE Wind Program above the $105 million request be provided for the development of offshore-specific technology. Although the immediate needs for wind technology and deployment are focused on land-based development, AWEA recognizes that offshore wind development offers a substantial opportunity for additional wind development.

Systems Integration.—This program area focuses on the power system operations issues of integrating variable, non-dispatchable power sources into the power system. Areas of special focus include developing and promoting advanced forecasting methods, developing and analyzing additional sources of system flexibility, expanding and implementing power system operation tools, and supporting interconnection-wide integration studies and plans.

Transmission Expansion.—Transmission expansion has been identified as one of the key areas of focus for meeting the 20 percent by 2030 wind energy goal. This area of funding should focus on issues related to expanding the transmission grid to increase access to wind resource areas.

Education and Workforce Development.—NREL has identified the lack of skilled workers as one of the biggest non-technical barriers to the growth of renewable energy industries. In addition to educating policymakers and stakeholders about wind power development, areas of special focus include making sure that DOL and DOE work together to increase the supply of professionals and technical specialists with wind-energy specific knowledge.

Resource Modeling and Wind Power Plant Efficiency Assessment.—A better understanding of wind resources and of turbine wake effects would provide an immediate benefit for projects to be sited and arranged to optimize energy yield and improve performance. Areas of special focus include funding for test centers to better understand wind flow models, research on the effect of wind turbines under unusual atmospheric conditions, and funding for wake loss models.

Siting (Resources, Land Use, Environmental Interface).—Greater funding for wind project siting issues would help the wind industry avoid unnecessary wind deployment delays, thus helping the industry to stay on track to meet the 20 percent vision by 2030. In general, increased funding in this area should be targeted toward

better understanding the impact of wind turbines on wildlife and radar installations and mitigating these impacts.

Small Wind (Turbines 100 Kilowatts and Smaller).—Greater Federal funding for these systems would help the small wind industry serve end users directly with domestic, on-site generation.

CONCLUSION

The President and Congress have called for a bolder commitment to the development of domestic renewable energy resources, particularly wind energy, to meet our Nation's growing energy needs. Continued investments in wind energy RD&D are delivering value for taxpayers by fostering the development of a domestic energy source that strengthens our national security, provides economic development, spurs new high-tech jobs, and helps protect the environment.

While the wind industry continues adding new generation capacity, a number of challenges still exist. Continued support for DOE's wind program is vital to helping wind become a more prominent energy source that leads to a host of economic and environmental benefits. AWEA urges the subcommittee to include $105 million for the DOE Wind Energy Program in fiscal year 2010. Any additional funding above this amount should be directed toward the advancement of offshore wind system technology.

AWEA would also appreciate the subcommittee providing OE with the $208 million included in the President's budget request. As mentioned earlier, the President's budget request for OE includes approximately $73 million that, at least in part, would benefit transmission development and grid integration related to wind deployment, including $20 million specifically for "transmission reliability and renewable integration."

AWEA appreciates this opportunity to provide testimony on DOE's fiscal year 2010 Wind Energy Program budget before the Senate Appropriations Subcommittee on Energy and Water Development. We thank the subcommittee for its time and attention to our request.

PREPARED STATEMENT OF THE AMERICAN SOCIETY OF PLANT BIOLOGISTS

On behalf of the American Society of Plant Biologists (ASPB) we submit this statement for the official record to support increased funding for the Department of Energy's Office of Science for fiscal year 2010 that would keep the Office on a doubling path. The testimony highlights the importance of biology, particularly plant biology, as the Nation seeks to address vital issues including climate change and energy security. We would also like to thank the subcommittee for its consideration of this testimony and for its strong support for the basic research mission of the Department of Energy's Office of Science.

The American Society of Plant Biologists is an organization of more than 5,000 professional plant biologists, educators, graduate students, and postdoctoral scientists. A strong voice for the global plant science community, our mission—which is achieved through engagement in the research, education, and public policy realms—is to promote the growth and development of plant biology and plant biologists and to foster and communicate research in plant biology. The Society publishes the highly cited and respected journals Plant Physiology and The Plant Cell, and it has produced and supported a range of materials intended to demonstrate fundamental biological principles that can be easily and inexpensively taught in school and university classrooms by using plants.

FOOD, FUEL, CLIMATE CHANGE, AND HEALTH—PLANT BIOLOGY RESEARCH AND AMERICA'S FUTURE

Plants are vital to our very existence. They harvest sunlight, converting it to chemical energy for food and feed; they take up carbon dioxide and produce oxygen; and they are almost always the primary producers in the Earth's ecosystems. Indeed, basic plant biology research is making many fundamental contributions in the areas of fuel security and environmental stewardship; the continued and sustainable development of better foods, fabrics, and building materials; and in the understanding of basic biological principles that underpin improvements in the health and nutrition of all Americans. To go further, plant biology research can help the Nation both predict and prepare for the impacts of climate change on American agriculture, and it can make major contributions to our Nation's efforts to combat global warming.

In particular, plant biology is at the center of numerous scientific breakthroughs in the increasingly interdisciplinary world of alternative energy research. For example, interfaces among plant biology, engineering, chemistry, and physics represent critical frontiers in both basic biofuels research and bioenergy production. Similarly, with the increase in plant genome sequencing and functional genomics, the interface of plant biology and computer science is essential to our understanding of complex biological systems ranging from single cells to entire ecosystems.

Despite the fact that plant biology research—the kind of research funded by the DOE—underpins so many vital practical considerations for our country, the amount invested in understanding the basic function and mechanisms of plants is relatively small when compared with the impact it has on multibillion dollar sectors of the economy like energy and agriculture.

RECOMMENDATIONS

ASPB, as a spokesperson for the plant science community, is in an excellent position to articulate the Nation's plant science priorities as they relate to bioenergy and, specifically, with regard to recommendations for bioenergy research funding through the Department of Energy's Office of Science. Our recommendations, in no particular order, are as follows:

—We commend the DOE Office of Science, through their Divisions of Basic Energy Sciences (BES) and Biological and Environmental Research (BER) for funding the Bioenergy Research Centers (BER) and the recently awarded Energy Frontier Research Centers (BES). Although these efforts are well designed and a significant step forward, these large centers will not have a monopoly on good ideas. Therefore, ASPB strongly encourages the appropriation of additional funds for the DOE Office of Science that would be specifically targeted to the funding of individual or small group grants for bioenergy research, like the Single-Investigator and Small-Group Research (SISGR) projects funded through BES in fiscal year 2009.

—The DOE Office of Science is the primary funding agency for physical science research. Past experience teaches us that many major scientific and technical breakthroughs occur at the interface between traditional scientific disciplines. Therefore, ASPB recommends appropriations that would specifically target the interface between plant biology and the physical sciences to encourage multidisciplinary and cross-disciplinary research that would address significant problems in bioenergy research.

—Photosynthetic research is one clear example of an interface between the physical sciences and biology. The DOE BER has been the major source of funds for basic studies of photosynthesis, which is the primary source of chemical energy on the planet. After all, fossil fuels are just photosynthetic energy that was trapped eons ago and converted through natural processes into the forms in which we use it today. However, the current funding available for photosynthetic research is not commensurate with the central role that photosynthesis plays in energy capture and carbon sequestration. Hence, ASPB calls for an increase in appropriations to BER to expand its research portfolio in the area of photosynthesis and carbon capture.

—Climate change is real and will have significant impacts on agriculture and our way of life for the foreseeable future. There are significant questions that must be answered as to how climate change will impact food production and the environment. There are also clear opportunities to use biological systems to ameliorate climate change, such as through carbon sequestration or modification of plants to resist environmental stress. Therefore, ASPB calls for additional funding focused on studies of the effect of climate change on agricultural cropping systems, basic studies of effects on plant growth and development, and targeted research focused on modification of plants to resist climate change and for use in carbon sequestration.

—Current estimates predict a significant shortfall in the needed scientific and engineering workforce in the energy area. The DOE Office of Science has traditionally not been a major funding agency for education and training, other than that which occurs through the funding of individual investigator and center grants. Given the expected need for additional scientists and engineers who are well-grounded in interdisciplinary research and development activities, ASPB calls for funding of specific programs (e.g., training grants) that are targeted to provide this needed workforce over the next 10 years and to adequately prepare them for careers in the interdisciplinary energy research of the future.

—The revolution in biological technology that has given rise to the various—omics subdisciplines has also generated enormous datasets that reveal the tremendous

complexity of biological systems. Computational biology is a relatively new discipline that arose from the interface of computer science and biology. These new technologies and approaches provide the only means by which these large biological datasets can be integrated and mined for new, relevant biological knowledge. Therefore, as discussed in item two above, ASPB calls for additional funding that would target this interface between biology and computer science. Specifically, we call for additional funding to develop computational platforms to develop a systems-level view of biology through the integration of data obtained from a variety of functional genomics approaches. This is clearly a "grand challenge" that is currently limiting the utility of this information. Additionally, we call for the funding of robust education and professional development programs, including training grants, that target the interface between computer and biological science.

—Considerable research interest is now being paid to the use of plant biomass for energy production. Progress in this area has been strongly affected by the "fuel vs. food" debate, which arose from the current emphasis on the use of corn for ethanol production. A response to this debate has been to switch the focus to plants that can be grown exclusively for biomass (e.g., switchgrass, miscanthus, etc). However, if these crops are to be used to their full potential, considerable effort must be expended to improve our understanding of their basic biology and development, as well as their agronomic performance. Unlike our current, major crops (e.g., soybean, corn), these novel crops have not benefitted from the many years of improvements in crop management and breeding—improvements that, among other things, have vastly increased yield and agronomic efficiency. Although similar efforts to improve targeted bioenergy crops are just beginning, we have established very aggressive goals for the use of these crops to meet the Nation's fuel needs. Therefore, ASPB calls for additional funding that would be targeted to efforts to increase the utility and agronomic performance of bioenergy crops.

Thank you for your consideration of our testimony on behalf of the American Society of Plant Biologists. Please do not hesitate to contact the American Society of Plant Biologists if we can be of any assistance in the future. For more information about the American Society of Plant Biologists, please see www.aspb.org.

PREPARED STATEMENT OF THE AMERICAN SOCIETY OF AGRONOMY, CROP SCIENCE SOCIETY OF AMERICA, AND THE SOIL SCIENCE SOCIETY OF AMERICA

Dear Chairman Dorgan, Ranking Member Bennett and members of the subcommittee, the American Society of Agronomy (ASA), Crop Science Society of America (CSSA), and Soil Science Society of America (SSSA) are pleased to submit the following funding recommendations for the Department of Energy for fiscal year 2010. For the Office of Science, ASA, CSSA, and SSSA recommend a funding level of $5.0 billion, a 4.8 percent increase over fiscal year 2009 ($4.722 billion). For the Office of Energy Efficiency and Renewable Energy, we recommend a funding level of $2.061 billion, a 7 percent increase over fiscal year 2009. Specifics for each of these and other budget areas follow below.

With more than 25,000 members and practicing professionals, ASA, CSSA, and SSSA are the largest life science professional societies in the United States dedicated to the agronomic, crop and soil sciences. ASA, CSSA, and SSSA play a major role in promoting progress in these sciences through the publication of quality journals and books, convening meetings and workshops, developing educational, training, and public information programs, providing scientific advice to inform public policy, and promoting ethical conduct among practitioners of agronomy and crop and soil sciences.

DEPARTMENT OF ENERGY OFFICE OF SCIENCE

The American Society of Agronomy, Crop Science Society of America, and Soil Science Society of America (ASA, CSSA, and SSSA) thank the Senate Energy and Water Appropriations Subcommittee (subcommittee) for providing $1.6 billion from Public Law 111–5, the "American Recovery and Reinvestment Act of 2009 (act)" for research funding through DOE's Office of Science, which oversees the Nation's research programs in climate science, advanced computing, and biofuels areas crucial to our energy future. The act also provides $2.5 billion for Research, Development, and Demonstration at universities, companies, and national laboratories for which we are very grateful.

ASA, CSSA, and SSSA understand the challenges the Senate Energy and Water Appropriations Subcommittee faces with the tight budget for fiscal year 2010. We

also recognize that the Energy and Water Appropriations bill has many valuable and necessary components, and we applaud the subcommittee for funding the DOE Office of Science in the fiscal year 2009 Omnibus Appropriations bill at $4.772 billion. For fiscal year 2010, ASA, CSSA, and SSSA recommend a funding level of $5.0 billion, a 4.8 percent increase over fiscal year 2009. Under the Energy Policy Act of 2005 (Public Law 109–58), the Office of Science was authorized to receive $5.2 billion in fiscal year 2009.

The Office of Science supports graduate students and postdoctoral researchers early in their careers. Nearly one-third of its research funding goes to support research at more than 300 colleges and universities nationwide. Moreover, approximately half the users at Office of Science user facilities are from colleges and universities, providing further support to their researchers. The Office of Science also reaches out to America's youth in grades K–12 and their teachers to help improve students' knowledge of science and mathematics and their understanding of global energy and environmental challenges. This recommended funding level of $5.0 billion is critical to ensuring our future energy self-sufficiency and as a means to address major environmental challenges including global climate change. Finally, a funding level of $5.0 billion will allow the Office of Science to: maintain and strengthen DOE's core research programs at both the DOE national laboratories and at universities; provide support for 1,000 PhDs, postdoctoral associates, and graduate students in fiscal year 2010; ensure maximum utilization of DOE research facilities; allow the Office of Science to develop and construct the next generation facilities necessary to maintain U.S. preeminence in scientific research; and enable DOE to continue to pursue the tremendous scientific opportunities outlined in the Office of Science Strategic Plan and in its 20 Year Scientific Facilities Plan.

BASIC ENERGY SCIENCES

Within the Office of Science, the Basic Energy Sciences (BES) Program is a multipurpose, scientific research effort that fosters and supports fundamental research to expand the scientific foundations for new and improved energy technologies and for understanding and mitigating the environmental impacts of energy use. ASA, CSSA, and SSSA support a fiscal year 2010 funding level of $1.682 billion, a 7 percent increase over fiscal year 2009, for BES.

The portfolio of programs at BES supports research in the natural sciences by focusing basic (discovery) research on, among other disciplines, biosciences, chemistry and geosciences. Practically every element of energy resources, production, conversion and waste mitigation is addressed in basic research supported by BES programs. Research in chemistry has lead to the development of new solar photoconversion processes and new tools for environmental remediation and waste management. Research in geosciences leads to advanced monitoring and measurement techniques for reservoir definition. Research in the molecular and biochemical nature of photosynthesis aids the development of solar photo-energy conversion.

Within the Basic Energy Sciences Program, the Chemical Sciences, Geosciences, and Energy Biosciences subprogram supports fundamental research in geochemistry, geophysics and biosciences. ASA, CSSA, and SSSA recommend $317,910,910 a 7 percent increase over the fiscal year 2009 funding level. The Geosciences Research Program supports research focused at developing an understanding of fundamental Earth processes that can be used as a foundation for efficient, effective, and environmentally sound use of energy resources, and provide an improved scientific basis for advanced energy and environmental technologies. The Biosciences Research Program supports basic research in molecular level studies on solar energy capture through natural photosynthesis; the mechanisms and regulation of carbon fixation and carbon energy storage; the synthesis, degradation, and molecular interconversions of complex hydrocarbons and carbohydrates; and the study of novel biosystems and their potential for materials synthesis, chemical catalysis, and materials synthesized at the nanoscale.

BIOLOGICAL AND ENVIRONMENTAL RESEARCH

Within the Office of Science, the Biological and Environmental Research (BER) Program, is a key component to developing and delivering the knowledge needed to support the President's plan to make America energy independent. ASA, CSSA, and SSSA support a 7 percent increase for BER which would bring the funding level to $643,647,800 for fiscal year 2010. ASA, CSSA, and SSSA support a variety of programs within BER including the Life Sciences subprogram which supports Carbon Sequestration Research (we recommend $8 million for fiscal year 2010), and the Genomes to Life (GTL) program. Within Genomes to Life are programs supportive of bioenergy development including GTL Foundation Research, GTL Sequencing,

GTL Bioethanol Research, and GTL Bioenergy Research Centers, all playing an important role in achieving energy independence for America. Also within BER is the Environmental Remediation subprogram and its Environmental Remediation Sciences Research program, both critical programs to advancing tools needed to clean up contaminated sites. ASA, CSSA, and SSSA recommend a funding level of $190,381,000, a 7 percent increase over fiscal year 2010 for Climate Change Research subprogram. This subprogram supports important areas of climate change research including: Climate Forcing which supports the Terrestrial Carbon Processes program and the Ameriflux network of research sites (which should receive $17 million in funding), as understanding the role that terrestrial ecosystems play in capturing and storing carbon is essential to developing strategies to mitigate global climate change. An additional program of high importance within the Climate Change Research subprogram is the Climate Change Response and its associated programs—Ecosystem Function and Response, and Education. Finally, also under the Climate Change Research subprogram is the Climate Change Mitigation program, part of BER's support to the Climate Change Technology Program, which will continue to focus only on terrestrial carbon sequestration.

DEPARTMENT OF ENERGY OFFICE OF ENERGY EFFICIENCY AND RENEWABLE ENERGY

The Office of Energy Efficiency and Renewable Energy (EERE) manages America's investment in the research and development (RD&D) of DOE's diverse energy efficiency and renewable energy applied science portfolio. For the Office of Energy Efficiency and Renewable Energy, we recommend a funding level of $2.061 billion, a 7 percent increase over fiscal year 2009. The fiscal year 2010 EERE budget should continue to maintain focus on key components of the AEI and Twenty in Ten including the Biofuels Initiative to develop affordable, bio-based transportation fuels from a wider variety of feedstocks and agricultural waste products.

NOTE: ASA, CSSA, and SSSA strongly oppose the use by the Department of the terms "agricultural wastes" or "crop wastes" when referring to crop residue. Crop residues, e.g., corn stover, etc. play a very important role in nutrient cycling, erosion control and organic matter development. Recent studies have shown that excessive removal of crop residues from agricultural lands can lead to a decline in soil quality. By no means should they ever be referred to as "wastes".

BIOMASS AND BIOREFINERY SYSTEMS

Within EERE, the Biomass and Biorefinery Systems R&D program plays an important role providing support for Regional Biomass Feedstock Development Partnerships and Infrastructure Core R&D programs, both within Feedstock Infrastructure. For the Biomass and Biorefinery Systems R&D program, we recommend a 7 percent increase for fiscal year 2010 which would bring funding to $190,381,000. The mission of the Biomass Program is to develop and transform our domestic, renewable, and abundant biomass resources into cost-competitive, high performance biofuels, bioproducts and biopower through targeted RD&D leveraged by public and private partnerships. ASA, CSSA, and SSSA support $18 million in funding for the Feedstock Infrastructure program.

CLIMATE CHANGE RESEARCH

ASA, CSSA, and SSSA urge the subcommittee to continue to provide strong support for Climate Change Research to the following programs as follows: Climate Change Science Program (CCSP), $150 million; Climate Change Research Initiative (CCRI), $25,672,000; and Climate Change Technology Program (CCTP), $850,301,000. These three programs together will increase our understanding of the impacts of global climate change and also develop tools and technologies to mitigate these impacts.

BASIC AND APPLIED R&D COORDINATION

The Office of Science continues to coordinate basic research efforts in many areas with the Department's applied technology offices. Within this area is Carbon Dioxide Capture and Storage R&D for which we recommend $20,055,000.

NATIONAL LABORATORIES

The Office of Science manages 10 world-class laboratories, which often are called the "crown jewels" of our national research infrastructure. The national laboratory system, created over a half-century ago, is the most comprehensive research system of its kind in the world. Five are multi-program facilities including the Oak Ridge National Laboratory.

NATIONAL ENERGY TECHNOLOGY LABORATORY (NETL)

ASA, CSSA, and SSSA urge the subcommittee to direct the Department to increase funding for its terrestrial carbon sequestration program, specifically The Regional Carbon Sequestration Partnerships, whose collaborations are essential to maintain.

OAK RIDGE NATIONAL LABORATORY (ORNL)

ORNL is one of the world's premier centers for R&D on energy production, distribution, and use and on the effects of energy technologies and decisions on society.

Thank you for your thoughtful consideration of our requests.

PREPARED STATEMENT OF THE CENTER FOR ADVANCED SEPARATION TECHNOLOGIES, VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

Chairman Dorgan, Ranking Member Bennett, and members of the subcommittee, I represent the Center for Advanced Separation Technologies (CAST), which is a consortium of five universities with strong programs in coal mining and processing. I appreciate the opportunity to submit this testimony requesting that your subcommittee add $3 million to the 2010 Fuels Program budget, Fossil Energy Research and Development, U.S. Department of Energy, for advanced separations research. Research in advanced separations technology development is authorized by the Energy Policy Act of 2005, title IX, subtitle F, sec. 962. I am joined in this statement by my colleagues from four other member universities: Richard A. Bajura, West Virginia University; Rick Q. Honaker, University of Kentucky; Peter H. Knudsen, Montana Tech of the University of Montana; Jan D. Miller, University of Utah.

FUNDING REQUEST FOR CENTER FOR ADVANCED SEPARATION TECHNOLOGIES

Fossil energy accounts for 86 percent of the energy used in the United States and the world. Due to concerns for global warming, the U.S. Government is making major investments in developing renewable energy resources and carbon capture and sequestration (CCS) technologies. However, it will take a while for many of the new technologies to come on line. Therefore, CAST will continue to develop advanced technologies that can be used to produce fossil fuels with minimal environmental impacts and to capture the harmful effluents generated from the utilization of fossil fuels.

Between 1990 and 2008, U.S. emissions of CO_2 from fossil fuel combustion grew by 27 percent. But the emissions in China rose 150 percent, from 2.3 to 5.9 billion tons. China's CO_2 emissions are now estimated to be about 24 percent of the global total, surpassing the U.S. contribution of 21 percent (State of the World 2009). It is projected that by 2030 developing countries will account for more than 75 percent of the increase in global CO_2 emissions. Thus, the United States must engage developing countries in its effort to curb CO_2 emissions.

A serious problem in China and India is that much of the coal is burned as mined without cleaning, causing low thermal efficiencies. In these two countries, the thermal efficiencies for power generation are 29 percent in average as compared to 38 percent in the United States. By increasing the efficiency to 33 percent by way of improving coal quality, the CO_2 emissions in China can be reduced by 20 percent. According to a recent IEA report, India could reduce CO_2 emissions by 55 percent using state-of-the-art technologies relating to coal quality, boiler/generator design, instrumentation and control, and high voltage distribution systems (Couch, 2002). Unfortunately, much of the coal burned in India is of low quality, assaying 35–42 percent ash, while the ash contents of the coals burned for power generation are mostly less than 8 percent. Helping China and India improve the quality of their coal burned for power generation would be the first step toward deploying clean coal technologies (CCT) and reducing CO_2 emissions substantially.

It is, therefore, the objective of CAST research to develop advanced technologies that can be used to remove various impurities from coal, so that it can be burned more cleanly and efficiently. These technologies can also be used to minimize the problems associated with waste disposal at mine sites and power plants, and help reduce CO_2 emissions in developing countries. It is also the objective to study and develop methods of extracting other fossil energy resources, such as oil sands, oil shale, and methane hydrates in environmentally acceptable manner.

SUMMARY OF ACCOMPLISHMENT

Cleaning coal becomes more difficult and costly as the size of coal particles becomes smaller. Therefore, many companies discard coal fines to impoundments along with the water that is used for their washing operations, or inject the coal-water slurries into abandoned, underground mines. The latter practice has been drawing criticism, as the water containing toxic elements (and sometimes the slurry itself) contaminates drinking water (Smith, V., AP News, March 21, 2009). The fine coal impoundments also pose environmental threats as they occasionally fail, releasing billions of gallons of slurry into the neighborhoods and rivers. Recognizing the seriousness of these problems, CAST has been developing a series of advanced fine coal cleaning technologies over the years. During the last few years, we have been focusing on developing methods of removing water (dewatering) from fine coal slurry, which is regarded one of the most technologically challenging problems for the coal industry. During 2008–2009, CAST has completed testing the hyperbaric centrifugal dewatering technology in operating plants. The results of the successful test program have been highlighted in Techline, DOE's web newsletter, in February 2009. Industry leaders consider this new development as the most significant technological breakthrough in 20 years.

CAST is also well known for its expertise in separating fine coal from ash-forming minerals. One success story was the development of the Microcel™ flotation technology, which is widely used around the world. During the last 2 years, FLSmidth Minerals, Salt Lake City, Utah, which is one of the world's largest mining equipment companies, has provided $900,000 of research funding to develop a mathematical model for the separation process. This industrial funding was provided as a matching fund against the $250,000 of CAST fund allocated for this project. The results of the project will be used to help the company improve the designs of the currently marketed flotation machines.

Indian coal is notoriously difficult to clean, because ash-forming minerals are finely disseminated in the coal matrix. Using conventional methods, it is difficult to reduce the ash content to below 12–14 percent by weight even for high-quality metallurgical coals. With the help of the U.S. Department of Energy, CAST is negotiating a $1.2 million research contract with Coal India Limited (CIL), in which a 75-tonnes per hour coal cleaning plant is designed, constructed by CIL, and demonstrated. The plant will be using the advanced technologies developed at CAST to reduce the ash content to below 8 percent.

In addition, CAST is testing a pilot-scale dry coal cleaning technology in India. This project is funded by the Department of State (DOS) in the amount of $1.1 million as part of the Asia Pacific Partnership (APP) for Clean Development and Climate program. The pilot-scale test unit has been shipped to India for on-site testing, which will begin within a month. The objective of this project and the one described in the forgoing paragraph is to help India clean coal before burning, which is considered the lowest-cost option to reduce CO_2 emissions in the country.

CAST research activities helped the fossil energy industries in Utah, including coal, oil sand and oil shale industries. For example, CAST funds have helped to sustain the development of new technology for the efficient utilization of western coal by Ambre Energy, North America, a Salt Lake City based company. Ambre Energy has licensed a University of Utah technology as part of their plans to construct a $300 million plant which will include, among others the production of advanced transportation fuels from western coal resources.

In the areas of post-combustion clean-up, CAST has developed metallic filters that can remove mercury from the flue gas generated at coal-fired power plants. Based on the successful laboratory test results, the mercury filters were tested at the PPL's Colstrip power plant in Montana. The removal efficiency was greater than 90 percent, verifying laboratory experiments. The mercury absorbed on the metallic filters were stripped off by an in situ thermal treatment, so that the filter can be reused and the mercury be collected for commercial use.

All of the fossil fuels, including coal, oil, natural gas, methane in hydrate, kerogen in oil shale, and bitumen in oil sands, are naturally hydrophobic. During 2008–2009, CAST has made significant advancements in the basic understanding of the nature of hydrophobicity and hydrophobic interactions. The results will be useful not only for developing these energy resources but also for separating different gases from each other. It is possible to convert one type of gas to hydrate (solid) leaving the others in gaseous form, thereby achieving separation.

PROPOSED WORK

Although coal is regarded as "dirty" fuel, it will take some time before clean, renewable fuels can replace coal substantially. According to the 2008 International

Energy Outlook (EIA, September 2008), coal consumption will increase faster than any other energy resource, particularly in China. Therefore, it is important to continue to develop methods of recovering and utilizing coal with minimal environmental impacts. To meet this objective, CAST will develop technologies that can be used to minimize the environmental problems both at mine sites (e.g., refuse pond and runoff water from valley-fill mining operations) and coal-burning power plants (e.g. ash pond, mercury emissions, and CO_2 emissions).

In addition to the hyperbaric centrifuge described above, CAST has been developing a novel technology that can remove water, ash, and other impurities simultaneously. Laboratory tests showed that this new technology can produce clean coal with lower moisture and lower ash contents at higher coal recoveries than can be achieved by using a combination of the Microcel and the centrifuge technologies. The new technology can, therefore, be implemented at lower capital cost and will be particularly useful for recovering coal from fine coal impoundments. During 2009–2010, the new process will be tested on a bench-scale continuous mode. Several companies have expresses strong interest in commercializing this new technology.

An important part of developing coal cleaning technologies is technology transfer. Therefore, CAST will devote considerable resources for on-site testing, problem solving, and offering short-courses and seminars for plant operators. Keeping industry operators abreast of CAST research will expedite the technology transfer and help the U.S. companies maintain a clean environment near mine sites.

Using the improved understanding of the basic sciences involved in gas hydrate formation, CAST will also develop methods of separating gases from each other. The methods will be based on solidifying one-type of gas as hydrate while keeping the others in gaseous form. For example, CO_2 and nitrogen present in combustion gases can be readily separated from each other by the selective hydrate formation method. One problem associated with the approach is the slow kinetics of hydrate formation. It is, therefore, proposed to find ways to increase the kinetics by using additives. The gas-gas separation process by forming hydrates can have higher capacity and lower cost than other methods.

The proposed research can also lead to the development of efficient methods for extracting methane from hydrate resources. The National Energy Technology Laboratory is spearheading a program to extract methane from the Alaskan North Slope with the objective of producing methane by 2015. CAST will explore the possibility of extracting methane from marine hydrate resources. It is estimated that the United States has 200,000 Tcf of methane as hydrate, while the proven reserve for dry natural gas is only 238 Tcf. The Blake Ridge deposit alone, off the shores of the Carolinas, has 1,300 Tcf of methane. Thus, the research on gas hydrate will lead to the development of unconventional gas resources, development of efficient gas-gas separation methods, sequestration of CO_2 as hydrate, and transport and storage of methane and hydrogen.

FUNDING REQUEST

It is requested that $3 million of funding for CAST be added to the fiscal year 2010 Fuels Program budget, Fossil Energy R&D, U.S. Department of Energy. Continued funding will allow CAST to develop advanced technologies for producing domestic energy resources in an environmentally acceptable manner, while helping developing countries reduce CO_2 emissions. The new technologies can also minimize concerns related to ash and refuse ponds and the runoff water at valley-fill mining operations. In addition, the new gas-gas separations technologies will have cross-cutting applications for a wide spectrum of the Fossil Energy R&D programs.

PREPARED STATEMENT OF THE FRIENDS COMMITTEE ON NATIONAL LEGISLATION (QUAKERS)

The Friends Committee on National Legislation (Quakers) thanks the subcommittee for the opportunity to submit this testimony for the record. We appreciate the subcommittee's transparency and willingness to open its proceedings to the public. The Washington Post paraphrased NNSA Administrator Thomas D'Agostino's testimony before the House Appropriations Energy and Water Development Subcommittee on March 24 as saying, "the number of new plutonium triggers that will be needed to keep the U.S. nuclear weapons stockpile reliable and secure has steadily dropped from 450 a year to 20."

Decreased demand, paired with President Obama's call for drastic reductions in the U.S. nuclear arsenal, requires for changes at NNSA. Our testimony centers on the need to restructure the NNSA budget in order to meet today's security demands

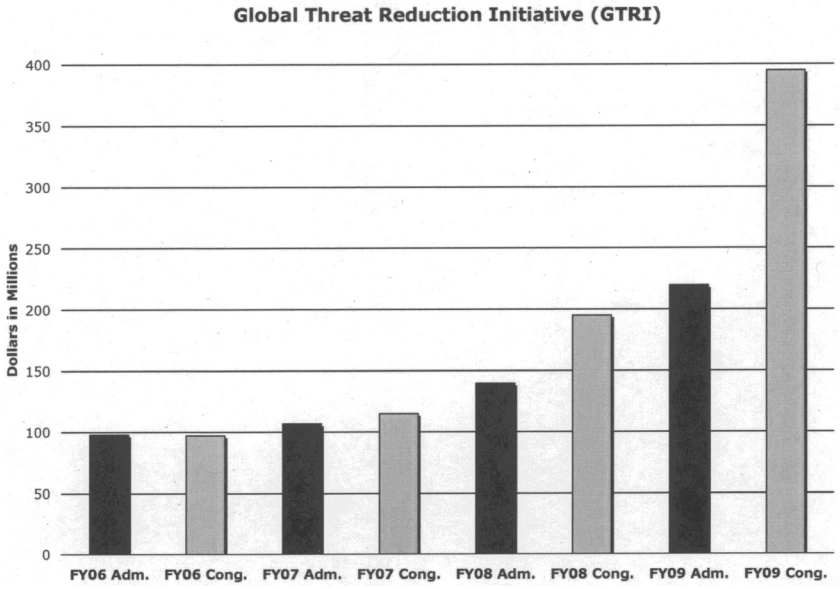
by adequately funding nuclear nonproliferation programs, supporting disablement and dismantlement programs in North Korea, reforming spending on the nuclear weapons complex, and discontinuing new nuclear weapons programs.

NUCLEAR NONPROLIFERATION PROGRAMS

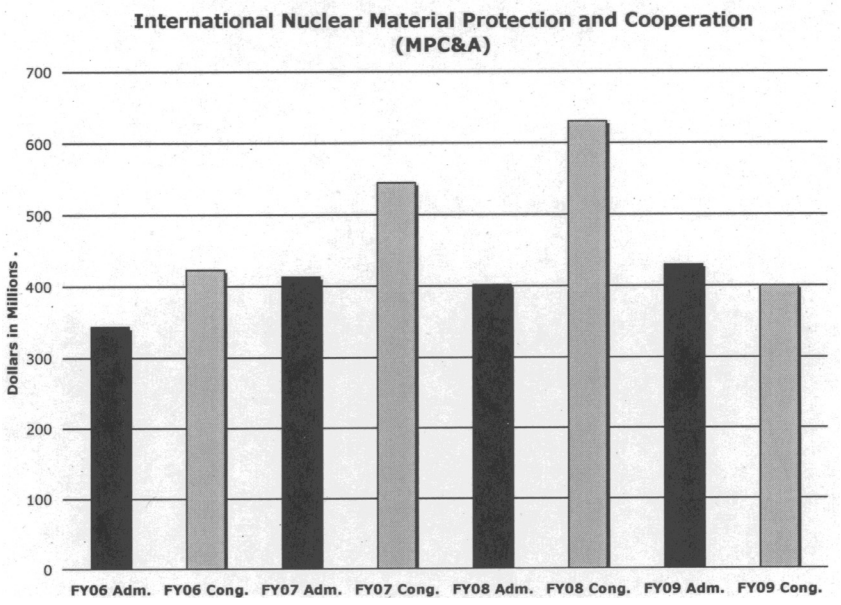
The subcommittee's commitment to nuclear nonproliferation programs has increased international security. The best example of that commitment is the increased funding allocated to the Global Threat Reduction Initiative (GTRI) in the omnibus appropriations bill for fiscal year 2009. Testifying before the Senate Appropriations Subcommittee on Energy and Water Development last year (April 30, 2008), former NNSA Deputy Administrator for Defense Nuclear Nonproliferation William Tobey pointed out the successes of GTRI:

The GTRI program, and its antecedents, have removed approximately 68 nuclear bombs' worth of highly enriched uranium and secured more than 600 radiological sites around the world, collectively containing over 9 million curies, enough radiation for approximately 8,500 dirty bombs. In the United States the GTRI program has removed over 16,000 at-risk radiological sources, totaling more than 175,000 curies—enough for more than 370 dirty bombs.

A graph of funding for GTRI over the past 4 years shows why the program has succeeded. We thank the subcommittee for supporting GTRI and believe, as is evidenced by Deputy Administrator Tobey's testimony, that the marginal benefit to international security from every dollar spent on nuclear nonproliferation programs is greater than that of any other dollar spent on national defense.



Other nuclear nonproliferation programs, such as the International Nuclear Materials Protection and Cooperation Program (MPC&A), which secures weapons-usable nuclear material in other countries, are in need of similar funding increases to accelerate the speed of finding and securing nuclear material, and upgrading the infrastructure which keeps weapons-grade material out of the wrong hands. As you can see, the previous administration's requests for MPC&A funding has been just above stagnant over the past several years. This year, Congress cut funds for MPC&A by $230 million because the program is winding down in Russia. Nevertheless, we believe the program should be expanded beyond Russia. Increasing and expanding MPC&A could be critical to achieving President Obama's goal to account for and secure all nuclear warheads and loose nuclear material around the world by the end of his first term.



We call on the subcommittee to make sufficient investments in the next generation of nuclear nonproliferation scientists. President Obama has stated that a top priority of his administration will be negotiating a verifiable fissile material cutoff treaty. Without expanding the pool of safeguards and other nonproliferation experts and drawing new talent into the field, the President's goal will not be achieved.

Administrator D'Agostino testified before the House Appropriations Energy and Water Development Subcommittee that the Federal Government has been unable to lure top tier scientific talent at institutions of higher learning away from the private sector. The Administrator pointed to fields such as radioanalytic chemistry, in which graduates could seek research careers in nuclear forensics. Instead, these students are increasingly choosing lucrative offers from private industry over the opportunity to serve the country. The subcommittee must determine ways to reverse this trend.

NUCLEAR WEAPONS COMPLEX

Administrator D'Agostino was blunt in pointing out that, "We must stop pouring money into an old, cold war complex that is too big and too expensive." We could not agree more strongly. The discourse over the size and scope of the nuclear weapons complex in recent years has mirrored moral, political, and global realities that nuclear weapons are becoming obsolete.

The numbers are striking. In 2005, NNSA proposed a new plutonium production facility with a capacity of 450 pits per year. In 2006, this figure was reduced to a capacity of 125 pits per year. Again, in 2007, the estimated necessary capacity was reduced to 80 pits per year. Administrator D'Agostino's testimony indicated that due to the changes on nuclear policy set forth by President Obama, NNSA is operating at the minimum production capacity of 20 pits per year. Simply put, with every passing year, the need for a large-scale capacity to produce plutonium pits bounds toward zero.

We recommend abandoning expensive plans to build new plutonium production facilities and focusing on how to secure existing facilities while decreasing pit production capacities as the country reduces its nuclear stockpile and pushes nuclear weapons toward irrelevance.

NEW NUCLEAR WEAPONS

Proponents of new nuclear weapons have been unable in past years to justify to lawmakers a need for programs like the nuclear "bunker buster" and so-called Reliable Replacement Warhead. Congress has declined to fund these programs year

after year, culminating with a line in the fiscal year 2009 omnibus appropriations bill, "Development work on the Reliable Replacement Warhead will cease."

Developing new nuclear weapons sends the wrong message to other nations. Rather than leading the way on the path to a nuclear weapons free world, the United States would be perceived as taking provocative actions and possibly spur reactions that increase global nuclear proliferation.

The subcommittee's scrutiny of nuclear weapons programs in a bipartisan basis has led to responsible decisions that avoid sending these mixed messages and demonstrate the leadership necessary to move forward on the bold changes necessary to achieve the elimination of nuclear weapons.

NORTH KOREAN DISABLEMENT AND DISMANTLEMENT

Last year, the Bush administration secured a waiver to the 1994 Glenn amendment to enable the National Nuclear Security Administration to provide assistance for the disablement and dismantlement of North Korea's nuclear facilities. However, the waiver, which passed in a supplemental appropriations bill for fiscal year 2008 (Public Law 110–252, sec. 1405), has not been implemented. The Obama administration must implement this waiver to allow for these activities to occur. We ask that the subcommittee encourage the administration to implement the waiver despite North Korea's recent actions. Should the six party talks with North Korea resume and inspectors be allowed back into North Korea, delays in implementing the waiver would only slow disablement and dismantlement programs.

Additionally, we urge the subcommittee to fund dismantlement and disablement activities in the fiscal year 2009 supplemental appropriations bill and the fiscal year 2010 budget at the level of the administration's request.

Thank you for your consideration.

PREPARED STATEMENT OF SOUTHERN COMPANY GENERATION

Mr. Chairman and members of the subcommittee, Southern Company operates the U.S. Department of Energy's (DOE's) National Carbon Capture Center (NCCC) at the Power Systems Development Facility (PSDF) in Wilsonville, AL (http://psdf.southernco.com) for DOE's National Energy Technology Laboratory (NETL) and several industrial participants.[1] The PSDF was conceived as the premier advanced coal power generation research and development (R&D) facility in the world. It has fulfilled this expectation. I would like to thank the Senate for its past support of the PSDF and request the subcommittee's continued support as the PSDF responds to the need for developing cost-effective carbon dioxide (CO_2) capture technology for coal fueled power generation. This statement supports the administration's budget request for DOE coal R&D which includes about $41.5 million for work at the PSDF. These funds are necessary to conduct the future test program developed in collaboration with DOE which includes wide-ranging support of the DOE Carbon Sequestration Technology Roadmap. The future focus of the PSDF is to conduct sufficient R&D to advance emerging CO_2 control technologies to commercial scale for effective integration into either combustion or Integrated Gasification Combined Cycle (IGCC) processes.

A key feature of the PSDF is its ability to test new carbon capture technologies for coal-based power generation systems at an integrated, semi-commercial scale. Integrated operation allows the effects of system interactions, typically missed in unintegrated pilot-scale testing, to be understood. The semi-commercial scale allows the maintenance, safety, and reliability issues of a technology to be investigated at a cost that is far lower than the cost of commercial-scale testing. Capable of operating at pilot to near-demonstration scales, the PSDF is large enough to produce data to support commercial plant designs, yet small enough to be cost-effective and adaptable to a variety of technology research needs.

In addition to semi-commercial scale testing, the PSDF will serve as a test bed for cost-effective technology screening by providing slipstreams of actual syngas from coal gasification and flue gas from coal combustion. Future test work at the PSDF will include the scale-up and continued development of several CO_2 capture technologies being developed either at DOE's NETL facility, at private R&D laboratories or at the PSDF. The DOE program for CO_2 capture in coal-fueled powerplants is divided into three areas: post-combustion capture for conventional pulverized coal plants, pre-combustion capture for coal gasification powerplants, and oxy-combus-

[1] Current PSDF participants include Southern Company, the Electric Power Research Institute (EPRI), American Electric Power, Luminant, Peabody Energy, Arch Coal, Inc., and Rio Tinto.

tion processes which produce a more CO_2-rich flue gas than conventional combustion for easier CO_2 capture. The PSDF's CO_2 capture efforts would address all three areas.

Southern Company also supports the goals of the Clean Coal Technology Roadmaps developed by DOE, EPRI, and the Coal Utilization Research Council (CURC). These Roadmaps identify the technical, economic, and environmental performance that advanced clean coal technologies can achieve over the next 20 years. Over this time period coal-fired power generation efficiency can be increased to over 50 percent (compared to the current fleet average of ~32 percent) while producing de minimis emissions and developing cost-effective technologies for CO_2 management.

SUMMARY

The United States has historically been a leader in energy research. Adequate funding for fossil energy research and development programs, including environmental and climate change technologies will provide our country with secure and reliable energy from domestic resources while protecting our environment. Current DOE fossil energy research and development programs for coal, if adequately funded, will assure that a wide range of electric generation options are available for future needs. Congress faces difficult choices when examining near-term effects on the Federal budget of funding energy research. However, continued support for advanced coal-based energy research is essential to the long-term environmental and economic well being of the U.S. Prior DOE clean coal technology research has already provided the basis for $100 billion in consumer benefits at a cost of less than $4 billion. Funding the administration's budget request for DOE coal R&D and long-term support of the Clean Coal Technology Roadmap can lead to additional consumer benefits of between $360 billion and $1.38 trillion.[2] But, for benefits to be realized from advanced coal R&D, the critically important R&D program outlined in the Clean Coal Technology Roadmap must be conducted.

One of the key national assets for achieving these benefits is the PSDF. The fiscal year 2010 funding for the PSDF needs to be about $41.5 million to support construction of new facilities to test technologies that are critical to the goals of the DOE Carbon Sequestration Technology Roadmap and to the success of the development of cost-effective climate change technologies that will enable the continued use of coal to supply the Nation's energy needs. The major accomplishments at the PSDF to date and the future test program planned by DOE and the PSDF's industrial participants are summarized below.

PSDF ACCOMPLISHMENTS

The PSDF test-bed has operated successfully for many years in support of U.S.–DOE's advanced coal program. Skilled staff from disciplines essential for a successful research program has gained experience by designing and operating the test equipment and by working with vendors to develop and improve their technologies. The PSDF has developed testing and technology transfer relationships with over 50 vendors to ensure that test results and improvements developed at the PSDF are incorporated into future plants. In some instances, testing has eliminated technologies from further consideration. Such screening is valuable in that it concentrates R&D effort on those technologies most likely to succeed and is an essential part of managing the U.S.–DOE's financial resources. Major subsystems tested and some highlights of the test program at the PSDF include:

Transport Reactor.—The transport reactor has been operated successfully on subbituminous, bituminous, and lignite coals as a pressurized combustor and as a gasifier in both oxygen- and air-blown modes and has exceeded its primary purpose of generating gases for downstream testing. Since modifications were made in 2006, subsequent testing with air-blown gasifier operations has indicated substantial improvements in syngas heating value and carbon conversion. This transport technology is projected to be the lowest capital cost coal-based power generation option, while providing the lowest cost of electricity and excellent environmental performance.

Advanced Particulate Control.—Two advanced particulate removal devices and 28 different filter elements types have been tested to clean the product gases, and material property testing is routinely conducted to assess their suitability under long-term operation. The material requirements have been shared with vendors to aid their filter development programs.

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[2] EPRI Report No. 1006954, "Market-Based Valuation of Coal Generation and Coal R&D in the U.S. Electric Sector", May 2002.

Filter Safe-Guard Device.—To enhance reliability and protect downstream components, "safe-guard" devices that reliably seal off failed filter elements have been successfully developed.

Coal Feed and Ash Removal Subsystems.—A key to successful pressurized gasifier operation is reliable operation of the coal feed system and ash removal systems. Developmental work on the pressurized coal feed systems has increased the understanding and optimization of their performance. Modifications developed at the PSDF and shared with equipment suppliers allow current coal feed equipment to perform in a commercially acceptable manner. An innovative, continuous process has also been designed and successfully tested that reduces capital and maintenance costs and improves the reliability of fine and coarse ash removal.

Syngas Cooler.—Syngas cooling is of considerable importance to the gasification industry. Devices to inhibit erosion, made from several different materials, were tested at the inlet of the gas cooler and one ceramic material has been shown to perform well in this application.

Advanced Syngas Cleanup.—A slipstream unit has provided a very flexible test platform for testing numerous syngas contaminant removal technologies to improve environmental footprint and reduce costs in IGCC gas clean-up.

Sensors and Automation.—Significant progress with sensor development and process automation has been achieved. More than 20 instrumentation vendors have worked with the PSDF to develop and test their instruments under realistic conditions. Development of reliable and accurate sensors for the gasification process has concentrated on coal feed, Transport Gasifier, and filter systems. Automatic temperature control of the Transport Reactor has been successfully implemented.

Fuel Cell.—Two test campaigns were successfully completed on 0.5 kW solid oxide fuel cells manufactured by Delphi on syngas from the transport gasifier marking the first time that a solid oxide fuel cell (SOFC) has been operated on coal-derived syngas. In addition, a NETL-erected SOFC multi-cell array test skid was used at PSDF to successfully conduct parallel testing of many cells directly on coal syngas.

CO_2 Capture.—Slipstream CO_2 capture testing has been completed on both simulated and actual syngas and results have been used to design larger test equipment.

PSDF FUTURE TEST PROGRAM

Developing technology options that will reduce CO_2 emissions is a primary goal for future work at PSDF. These technologies will be screened in close collaboration with NETL for selection for testing at the PSDF. This facility will serve as a productive test-bed for developing advanced technology and is capable of operating from bench- and pilot-scale to near demonstration scales allowing results to be scaled to commercial application. The PSDF will concentrate on developing cost-effective, commercially viable carbon capture technology for coal-fueled powerplants through scale-up and continued development of several technologies (including for example those being developed either at DOE's facilities or by third party technology developers).

For both new and existing powerplants, post-combustion capture technology must be made more efficient and cost-effective. In post-combustion capture, CO_2 is separated from the flue gas in a conventional coal-combustion powerplant downstream of the pulverized coal boiler. Many technologies are under consideration for post-combustion capture, but these technologies need to be proven and integrated in an industrial powerplant setting. Activities at the PSDF for post-combustion capture technology will include:

Pilot-Scale Test Modules.—Pilot-scale test modules of advanced post-combustion technologies will be designed, installed, and operated in an existing pulverized coal plant adjacent to the PSDF. The flexible design of these test modules will allow the testing of a wide range of technologies on actual flue gas.

Technology Screening.—Available solvents developed by NETL, PSDF and others will be screened to assess readiness for testing at the site using improved contacting devices that are now under development.

Alternative Solvent Processes.—Alternative solvents with lower heats of regeneration and more compact, lower cost gas-liquid contacting equipment will be developed and tested.

Advanced Technology.—Compact membrane contactors and solid phase CO_2 sorbents that are currently being investigated by DOE–NETL and private companies will be assessed and installed. PSDF will provide a scaled-up testing platform for these technologies as development progress warrants.

In pre-combustion capture, CO_2 is separated from the syngas in a coal gasification powerplant upstream of combustion in the gas turbine. Research & development ac-

tivities at PSDF for pre-combustion capture technology for application to gasification-based power generation include:

Advanced CO_2 Capture Systems.—New solvents and gas-liquid contacting devices will be evaluated on air-blown and oxygen-blown syngas. New sorbent-based or membrane-based CO_2 separation technologies will be scaled-up and tested based on progress in fundamental R&D by third party developers.

Water Gas Shift Enhancements.—New water gas shift reactor configurations and sizes are planned for testing at the PSDF. The operation of shift catalysts when exposed to syngas at the PSDF will be optimized and their technical and economic performance will be evaluated.

Advanced Syngas Cleanup.—New advanced syngas cleanup systems will be tested for reducing hydrogen sulfide, hydrochloric acid, ammonia, and mercury to near-zero levels.

In order to develop a cost-effective advanced coal powerplant with CO_2 capture, all process blocks within the powerplant must be optimized in addition to the capture block. Including CO_2 capture in an advanced coal powerplant will increase the plant cost of electricity (COE), so opportunities to reduce cost in every part of the process will be explored. Although highest priority will be given to low-cost CO_2 capture process development, projects that reduce overall process capital and operating costs will also be included in the PSDF test plan to partially offset incremental cost increases due to the addition of CO_2 capture. These cost reduction projects include technology development for syngas cleanup, particulate control, fuel cells, sensors and controls, materials, and feeders.

PREPARED STATEMENT OF ASME

Mr. Chairman, ranking member, and members of the subcommittee, the ASME Energy Committee is pleased to provide this testimony on the fiscal year 2010 budget request for research and development programs in the Department of Energy (DOE).

INTRODUCTION TO ASME AND THE ASME ENERGY COMMITTEE

The 127,000-member ASME is a nonprofit, worldwide educational and technical Society. It conducts one of the world's largest technical publishing operations, holds more than 30 technical conferences and 200 professional development courses each year, and sets some 600 industrial and manufacturing standards. The Energy Committee of ASME's Technical Communities comprises 30 members from 17 divisions of ASME, representing approximately 40,000 of ASME's members.

ASME has long advocated a balanced energy supply mix to meet the Nation's energy needs, including advanced coal, petroleum, nuclear, natural gas, biomass, solar, wind and hydroelectric power, and energy efficient building and transportation technologies. Only such a portfolio will allow the United States to maintain its quality of life while addressing future environmental and security challenges. Sustained growth will also require stability in licensing and permitting processes not only for power stations but also for transmission and transportation systems.

A forward-looking energy policy will require enhanced, sustained levels of funding for R&D as well as Government policies that encourage deployment and commercialization. While the Energy Committee supports much of the fiscal year 2010 budget request, especially the increases in funds for fundamental scientific research, we wish to reemphasize that a balanced approach to our energy needs is critical and we are concerned about the decrease in funding for nuclear energy, which is essential to meeting our national energy needs.

CRITICAL ISSUES

The Energy Committee would like to point out some critical energy issues:

—Additional investment guarantees for construction of new clean and especially nuclear facilities must be enacted in future energy legislation. These guarantees will enable lower financing costs for a variety of energy technologies leading to lower energy costs for the American public. Extending these programs further into the future will allow a reasoned rate of increase in construction and application of these technologies for electric generation.

—There is a critical shortage of trained persons in the workforce at all levels. This includes persons in the various building trades that will be involved in the construction of our energy systems, persons in the manufacturing industry that will manufacture the components that make up our energy systems, persons who will be available to operate and maintain the energy systems when they

are built, and persons trained as engineers and scientists at all levels who will perform the R&D and design functions for all energy systems. A recent initiative, "Regaining our ENERGY Science and Engineering Edge" or "RE–ENERGYSE," a program being conducted jointly by the DOE EERE and the National Science Foundation (NSF) and geared to young scientists and engineers, is a positive step toward addressing this chronic issue.

FOSSIL ENERGY

The fiscal year 2010 budget request of $884 million for fossil energy represents a $513 million decrease over the fiscal year 2009 appropriation. Fossil Energy Research and Development would be reduced $112 million to $403 million. The R&D budget for oil and natural gas related research has been eliminated. It should be noted that the DOE Office of Fossil Energy received $3.4 billion for Research and Development as part of ARRA, for research, development and deployment of carbon capture and sequestration, therefore the ASME Energy Committee supports this funding request. The Energy Committee supports the current proposed funding for coal research programs at $617 million for fiscal year 2010. The effective use of coal in today's environment demands an increase in efficiency and a decrease in release of environmentally harmful waste streams. A large portion of this effort right now is the Clean Coal Program Initiative (CCPI), which received $1.5 billion as part of ARRA and therefore, did not request any additional funding for fiscal year 2010. This approach builds on technological R&D advancements in IGCC and CCS technology achieved over the past 5 years and provides commercial-scale demonstration opportunities for fossil energy powerplants.

The use of more efficient processes for coal use, such as advanced integrated gasification combined cycle technology, combined with carbon sequestration will allow the United States to utilize its coal resources in a more environmentally sound and cost effective manner. We encourage strong and consistent funding for these programs now and in future years.

ADVANCED FUELS RESEARCH

The Energy Committee agrees that the advanced fuels research should be aimed at fuels used in the transportation system. We believe that the development of transportation fuel systems that are not petroleum based is a critical part of our future national energy policy. The fiscal year 2010 budget for biomass and bio-refinery systems R&D is increased by $18 million to $235 million. The Energy Committee encourages Congress to ensure that these research programs continue to receive adequate funding. We are also pleased to see the increase to $330 million in the effort related to vehicle technologies with a program emphasis on plug-in hybrid electric vehicles.

NUCLEAR ENERGY

The Energy Committee is discouraged to see a steep decrease in the DOE Nuclear Energy budget to $844 million in fiscal year 2010. Even with the reduction of the MOX fuel fabrication facility from the Nuclear Energy budget, placing it back with the Nuclear National Security Administration (NNSA), the nuclear R&D portion of the budget request is reduced by $112 million to $403 million for fiscal year 2010. Because of the sharp reduction in funding, and the decision to exclude the Office of Nuclear Energy from ARRA, the Committee strongly recommends restoring funding for DOE Office of Nuclear Energy to at least the levels appropriated in fiscal year 2009. Nuclear power, as a non-greenhouse gas-emitting resource, is a critical component of a diverse U.S. power generation mix and should play a larger role in the Nation's base power supply. Sustained increases in nuclear power research are justified by the imperative of low cost, low emissions electricity.

Proposed increases in the Nuclear Energy budget are most evident in the Generation IV Nuclear Energy Systems, $191 million, Fuel Cycle R&D, $192 million, and Nuclear Power 2010 program at $20 million. The primary decrease is in the Generation IV Nuclear Systems Initiative which is $45 million. The Energy Committee believes that nuclear generated electricity is important to the Nation, especially in a more carbon conscious environment. Therefore continued R&D looking at advanced nuclear systems is critical.

The GNEP program, before its cessation in the fiscal year 2009 Omnibus Appropriations bill, was a vital means to enhancing the future of safe, reliable, nuclear energy through the establishment of international centers for nuclear fuel cycle services for nations both large and small. Although no funding is provided for GNEP, the Advanced Fuel Cycle Initiative, now called Fuel Cycle R&D, would receive $192 million in funding in fiscal year 2010. The Energy Committee concurs

with the DOE goal to establish a full scale demonstration of the required facilities, including a burner reactor and fuel recycle plant that will not produce a pure plutonium product stream. The ASME Energy Committee is disappointed with the cancellation of the GNEP program and urges Congress and the administration to reconsider the discontinuation of GNEP. GNEP was established as an international effort and many international partners had agreed to participate. This is consistent with efforts to establish an international nuclear fuel bank.

ENERGY EFFICIENCY AND RENEWABLE ENERGY

The Office of Energy Efficiency and Renewable Energy (EERE) manages America's investment in research, development and deployment of the Department of Energy's (DOE) diverse energy efficiency and renewable energy applied science portfolio. It should be noted that the DOE EERE received $16.5 billion as part of ARRA, including $2.5 billion for Research and Development. The fiscal year 2010 request of $2.02 billion, $570 million above the fiscal year 2009 appropriated amount, provides a broad and balanced portfolio of solutions to address the urgent energy and environmental challenges currently facing our Nation. Most of the key EERE programs, including Biomass, Solar, Wind, Geothermal, Building Technologies, Vehicle Technologies, and Industrial technologies, have received sizable increases in funding to support the growth of renewable energy that the United States needs. The potential to reduce the production of greenhouse gases and to meet the growing need for domestically produced energy justifies sustained and increased support for these programs.

The Fuel Cell Technologies program, formerly known as the Hydrogen technology program has been reduced $100 million from the fiscal year 2009 appropriation. While the administration has publicly indicated that they view the probability of fuel cell vehicles as "low", this program is a key driver in the development of fuel cell technology. The Energy Committee encourages restoring funding to the Hydrogen Program consistent with the fiscal year 2009 appropriation. The other technology program to receive a cut was the Water Power Program, which is now requested to receive $30 million in fiscal year 2010—a 25 percent or $10 million cut from fiscal year 2009. While relatively small, this program supports R&D for wave and ocean energy technologies as well as conventional and pumped storage hydropower. Water power will contribute significantly to the eventual transition to clean and renewable power generation in the United States. The Energy Committee encourages restoring funding to the Water Power Program consistent with the fiscal year 2009 appropriation.

The integration of renewable electric generating systems into the operation of the electricity distribution system is critical to economic operation of these systems. DOE's support of R&D into distributed systems integration began in fiscal year 2007. The Energy Committee believes that R&D related to the integration of the electric grid and its control as a national system is imperative to the growth of renewable energy generating technologies and we encourage full funding for such research.

SCIENCE AND ADVANCED ENERGY RESEARCH PROGRAMS

The Energy Committee is pleased by the increased request for the Office of Science (OS) which restores the funding trajectory mandated in the America Competes Act of 2007. It should be noted that the DOE Office of Science received $1.6 billion as part of ARRA. The fiscal year 2010 budget proposal of $4.94 billion is an increase of $184 million over the fiscal year 2009 appropriation. OS programs in high energy physics, fusion energy sciences, biological and environmental research, basic energy sciences, and advanced scientific computing, serves, in some small way, every student in the country. These funds support not only research at the DOE Laboratories but also work at a large number of universities and colleges. We believe that basic energy research will also improve U.S. energy security over the long term, through its support for R&D on cellulosic ethanol, advanced battery systems, and fusion.

OTHER DOE PROGRAMS

DOE is also very active in areas outside of R&D. The environmental remediation program that funds the decommissioning and decontamination of old DOE facilities is one such program. The Energy Committee questions the advisability of all of the budget decreases in this program. The coming resurgence in the commercial nuclear arena is likely to deplete the trained professionals available for this program as engineers choose to move to the more stable commercial environment. Congress should

appropriate the budget to ensure that this work is accomplished in an expeditious manner.

CONCLUSION

Members of the ASME Energy Committee consider the issues related to energy to be one of the most important issues facing our Nation. The need for a strong and coherent energy policy is apparent. We applaud the administration and Congress for their understanding of the important role that scientific and engineering breakthroughs will play in meeting our energy challenges. In order to promote such innovation, strong support for energy research will be necessary across a broad portfolio of technology options. DOE research can play a critical role in allowing the United States to use our current resources more effectively and to create more advanced energy technologies.

Thank you for the opportunity to offer testimony regarding both the R&D and other parts of the proposed budget for the DOE. The ASME Energy Committee is pleased to respond to additional requests for additional information or perspectives on other aspects of our Nation's energy programs.

This statement represents the views of the Energy Committee of ASME's Technical Communities and is not necessarily a position of ASME as a whole.